IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

This PHOTOFACT Folder Set is

WIRE-SEALED FOR YOUR PROTECTION

to guarantee completeness of contents

DO NOT ACCEPT IF SEAL HAS BEEN BROKEN

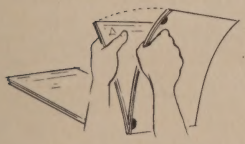
TO OPEN ***JUST DO THIS:***

1

Take hold of the Set with both hands. Place your thumbs directly under the top wire-seal; then, divide the contents equally by putting your thumbs midway through the thickness of the Set. Now, pull the two sections apart at the top, firmly.

2

Repeat this process, pulling close to the wire-seal at the bottom, so that the set is now divided into two equal parts.



3

Continue this "pulling-apart" process with the section in which the wire-seals remain, dividing it in half.

4

Finally, remove the wire-seals left in the last section; this can easily be done with your fingernail or any sharp instrument.

Your "Safety-Sealed" PHOTOFACT Set is now ready for profit-making use . . .

IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

The PHOTOFACT® Servicer

SET 489 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ JUNE 1960

CONTENTS PHOTOFACT SET 489

TRADE NAME AND MODEL	SET AND FOLDER NO.
TELEVISION RECEIVERS	
RCA VICTOR	
240-KV-775SU, 240-KV-776SU (Ch. KCS127AE, RC1192B, RS171E)	489-1
TRUETONE	
2DC3000, 2DC3001	489-2
OTHER EQUIPMENT	
ARVIN	
1093, 8092, 8093 (Ch. 1.48300, 1.48600)	489-3
AUTOMATIC	
P-57	489-4
AUTOMATIC	
BAP-9, BP-679, CT-356, CTR-6B, DAP-39, DX-619, RAP-89, RP-519	489-5
BOGEN	
BT25	489-6
CAPITOL	
926	489-7
CORONADO	
PH3-4054A, PH3-4055A	489-8
CORONADO	
RA50-8211A, RA-50-8212B	489-9
CROWN Tape Recorder	
Gold Crown Models 701, 702, 702C, 702/A15, 712, 712/A3030, 714C, 754C	489-10
CROWN	
SXA	489-11
DYNAMIC	
AS-40R (Ch. 400)	489-12
FIRESTONE	
4-H-9, 13-R-1 (Code 11-9-459)	489-13
LAFAYETTE	
FS-200	489-14
MOTOROLA	
SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)	489-15
PHONOLA	
2759	489-16
RCA VICTOR	
TX1HE, TX1K, TX1JE (Ch. RC-1196A)	489-17
SILVERTONE	
15, 16, 17, 18 (Ch. 132.48700)	489-18
SILVERTONE	
206, 207 (Ch. 132.45103)	489-19
SUPEREX	
TR-66	489-20
WESTINGHOUSE	
50MP1	489-21

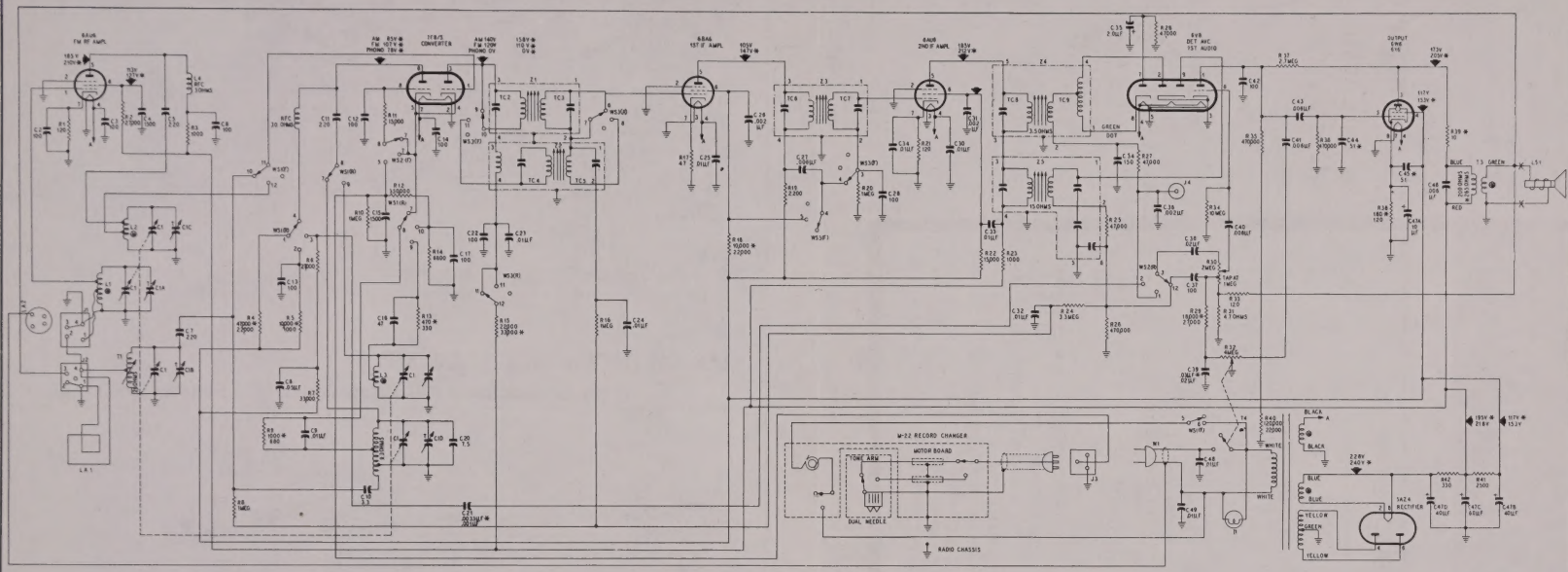
This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

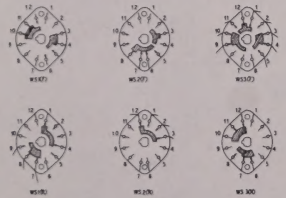
IN THIS ISSUE OF THE SERVICER:

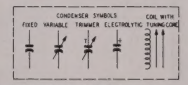
General Electric
Models 870, 871

Philco Models
52-1731, 52-1736

Webcor Model
1134







ALL VOLTAGES MEASURED WITH A 20000-OHMS-PER-VOLT VOLTMETER BETWEEN POINTS INDICATED AND CHASSIS, AT A LINE VOLTAGE OF 117V AC.

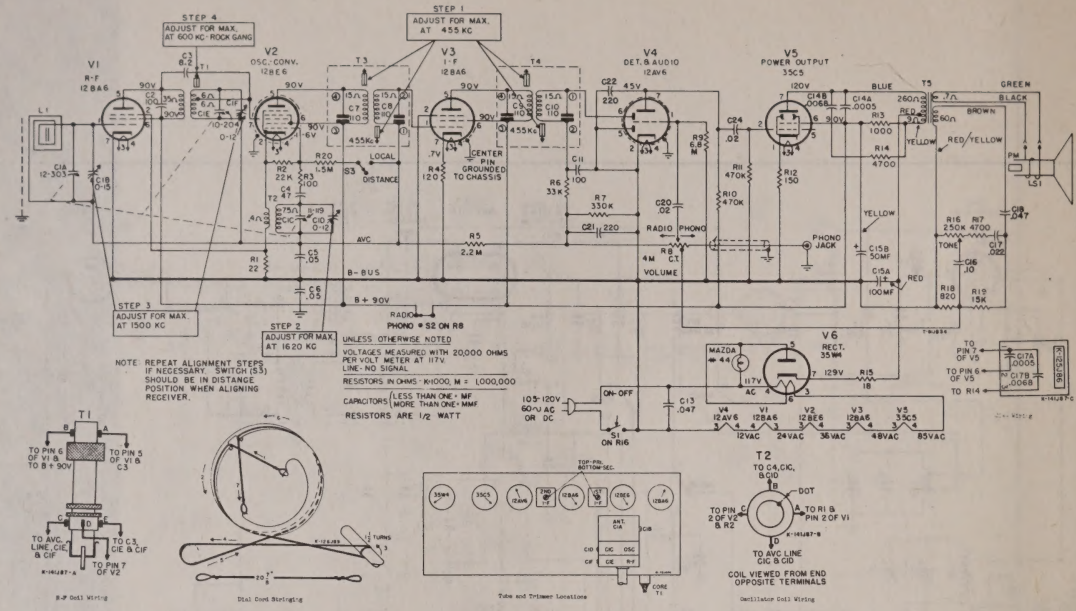
ALL RESISTOR VALUES IN OHMS AND ALL CONDENSER VALUES IN UUF UNLESS OTHERWISE MARKED

*PARTS VALUES AND VOLTAGES MARKED WITH AN ASTERISK APPLY TO MODEL 52-1736.

@LESS THAN ONE OHM

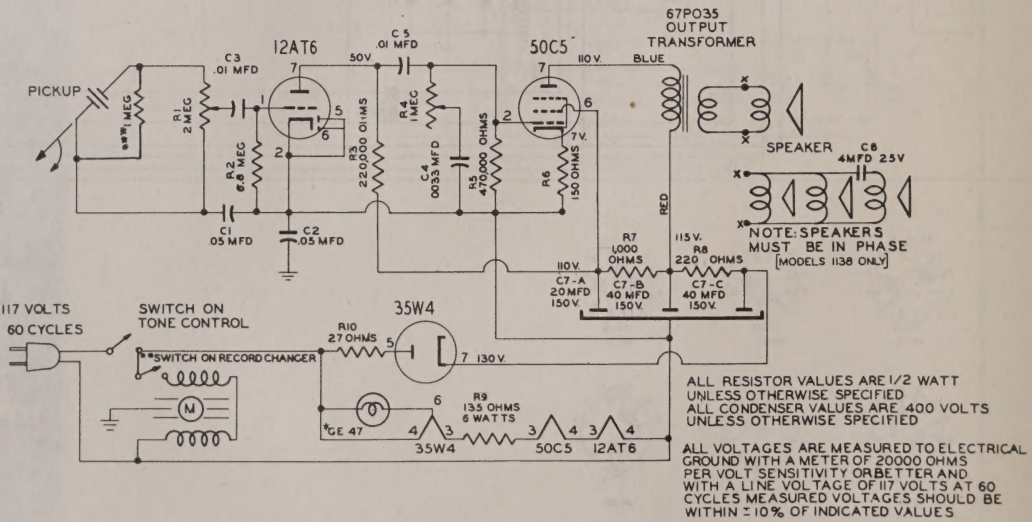
PHILCO MODELS 52-1731, 52-1736

Schematic Diagram Courtesy of Philco Corporation



GENERAL ELECTRIC MODELS 870, 871

Schematic Diagram Courtesy of General Electric Co.


67P035 OUTPUT TRANSFORMER
12AT6
50C5
35W4
PICKUP
C1 .05 MFD
C2 .05 MFD
C3 .01 MFD
C4 .0033 MFD
C5 .01 MFD
R1 2 MEG
R2 6.8 MEG
R3 220,000 OHMS
R4 1 MEG
R5 470,000 OHMS
R6 150 OHMS
R7 1,000 OHMS
R8 220 OHMS
R9 135 OHMS 6 WATTS
R10 27 OHMS
C6 4MFD 25V
C7-A 20 MFD 150V.
C7-B 40 MFD 150V.
C7-C 40 MFD 150V.
SPEAKER
NOTE: SPEAKERS MUST BE IN PHASE [MODELS 1138 ONLY]
117 VOLTS 60 CYCLES
SWITCH ON TONE CONTROL
SWITCH ON RECORD CHANGER
*GE 47
ALL RESISTOR VALUES ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED
ALL CONDENSER VALUES ARE 400 VOLTS UNLESS OTHERWISE SPECIFIED
ALL VOLTAGES ARE MEASURED TO ELECTRICAL GROUND WITH A METER OF 20000 OHMS PER VOLT SENSITIVITY OR BETTER AND WITH A LINE VOLTAGE OF 117 VOLTS AT 60 CYCLES MEASURED VOLTAGES SHOULD BE WITHIN ± 10% OF INDICATED VALUES

WEBCOR MODEL 1134

Schematic Diagram Courtesy of Webcor, Inc.

PHOTOFACT® Folder with CIRCUITRACE®

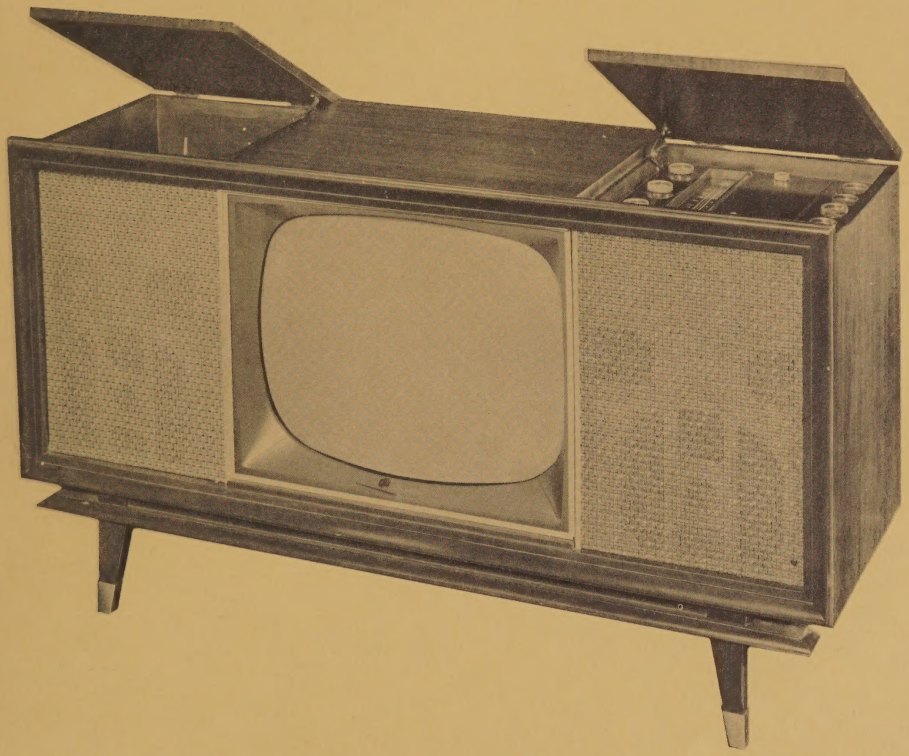
RCA VICTOR MODELS
240-KV-775SU, 240-KV-776SU
(Ch. KCS127AE, RC1192B, RS171E)

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

RCA VICTOR MODELS
240-KV-775SU, 240-KV-776SU
(Ch. KCS127AE, RC1192B, RS171E)



MODEL 240-KV-775SU
(CH. KCS127AE, RS171E, RC1192B)

RCA VICTOR MODELS
240-KV-775SU, 240-KV-776SU
(Ch. KCS127AE, RC1192B, RS171E)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

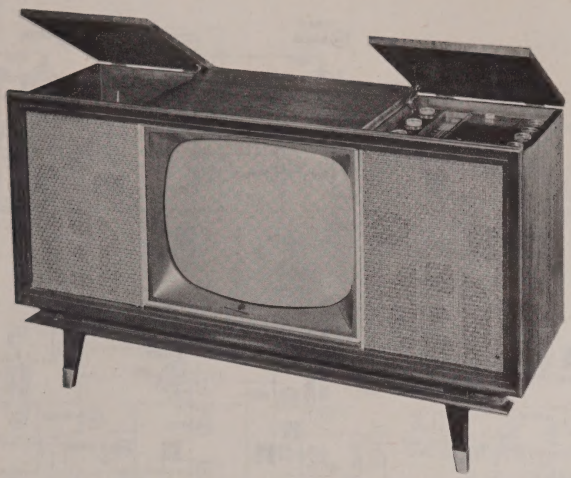
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

SET 489 FOLDER 1

PHOTOFACT® Folder with CIRCUITRACE®

RCA VICTOR MODELS 240-KV-775SU, 240-KV-776SU (Ch. KCS127AE, RC1192B, RS171E)

RCA VICTOR MODELS 240-KV-775SU, 240-KV-776SU (Ch. KCS127AE, RC1192B, RS171E)



MODEL 240-KV-775SU
(CH. KCS127AE, RS171E, RC1192B)

TRADE NAME	RCA Victor	MODELS 240-KV-775SU, 240-KV-776SU	CHASSIS TV : KCS127AE FM-AM Tuner : RC1192B Amplifier : RS171E
MANUFACTURER	Radio Corporation of America, RCA Tele. Div., Camden 8, N. J.		
TYPE SET	Television Receiver With FM-AM Tuner, Dual Channel Amplifier, and 4 Speed Automatic Record Changer		
TUBES	TV: VHF - Seventeen	FM-AM Tuner: Eight	Amplifier: Six
POWER SUPPLY	110-120 Volts AC, 60 Cycle		
RATING	TV Only: 200 Watts, 1.8 Amp. @ 117 Volts AC FM-AM Tuner & Amp: 130 Watts, 1.2 Amp. @ 117 Volts AC (Less Phono Motor) TV, FM-AM Tuner & Amp: 330 Watts, 3.0 Amp. @ 117 Volts AC (In TV-FM Pos.)		
TUNING RANGE	TV: Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) FM-AM Tuner: FM 88-108MC IF 10.7MC AM 540-1600KC IF 455KC		

FOR SERVICE INFORMATION ON RECORD CHANGER RP211-1 SEE PHOTOFACT SET 475 FOLDER 7

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 6 screws holding metal strip at top of safety glass. Remove metal strip, holding glass at top. Tilt glass forward and remove.

FUSE

A .3A fuse (chemical, fusible-resistor type) is used for Horizontal Sweep protection. (For location, see "Tube Placement Chart".)
Two fuse wires are used for filament protection. (For location, see M2 & M3 in Photo, "L V Supply and Horiz Sweep Section - Bottom View".)

TUNER OSCILLATOR ADJUSTMENTS

To touch up VHF Oscillator remove Channel Selector Knob.

AGC

The AGC may be varied by means of a Control. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by means of a Focus control. (For location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Stabilizing Slug Bl. (For location, see "Tube Placement Chart".)

WIDTH

The width may be varied by a Width Coil. (For location, see "Tube Placement Chart".)

HORIZONTAL DRIVE

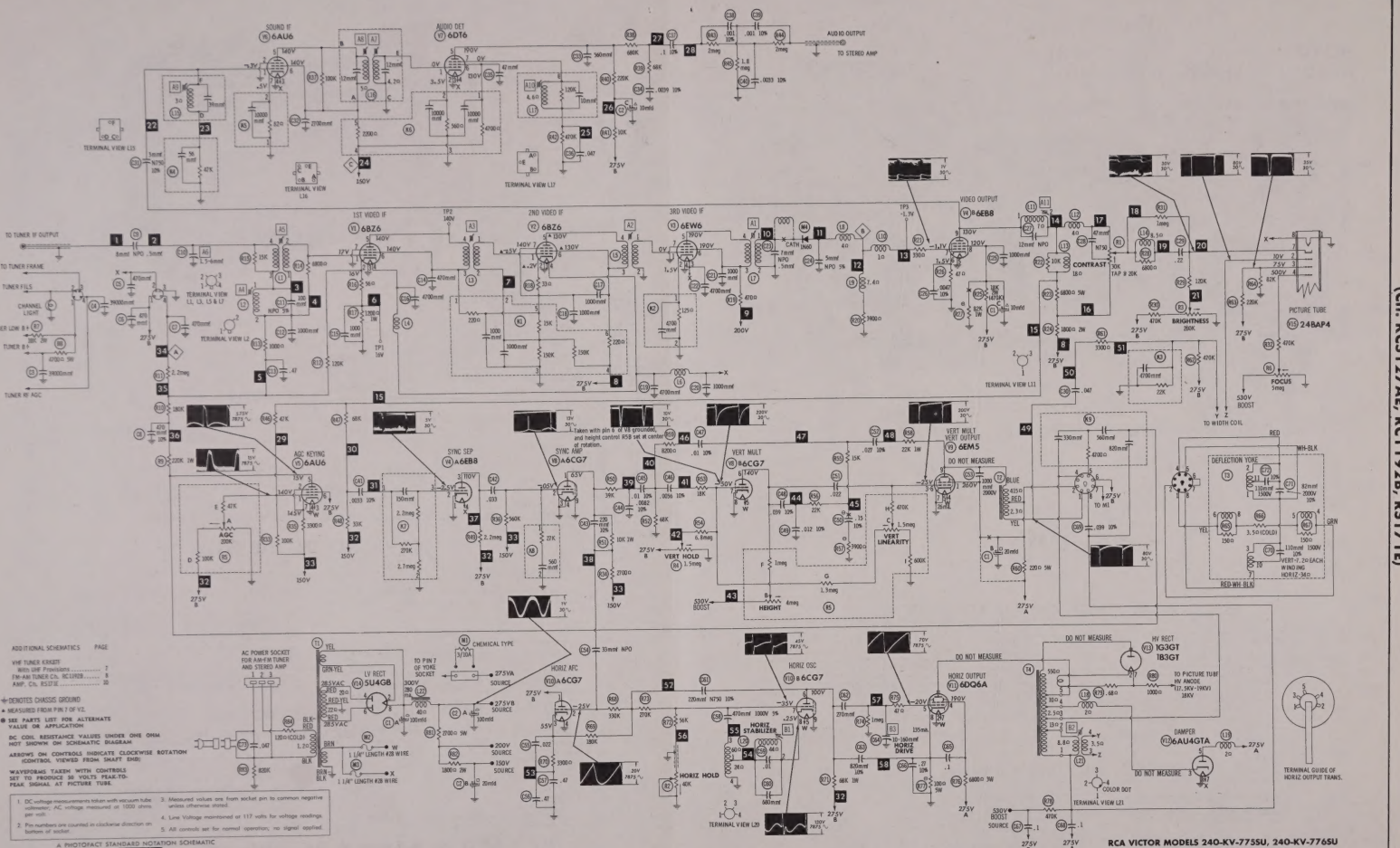
The horizontal drive may be varied by a Horizontal Drive Trimmer. (For location, see "Tube Placement Chart".)

CENTERING

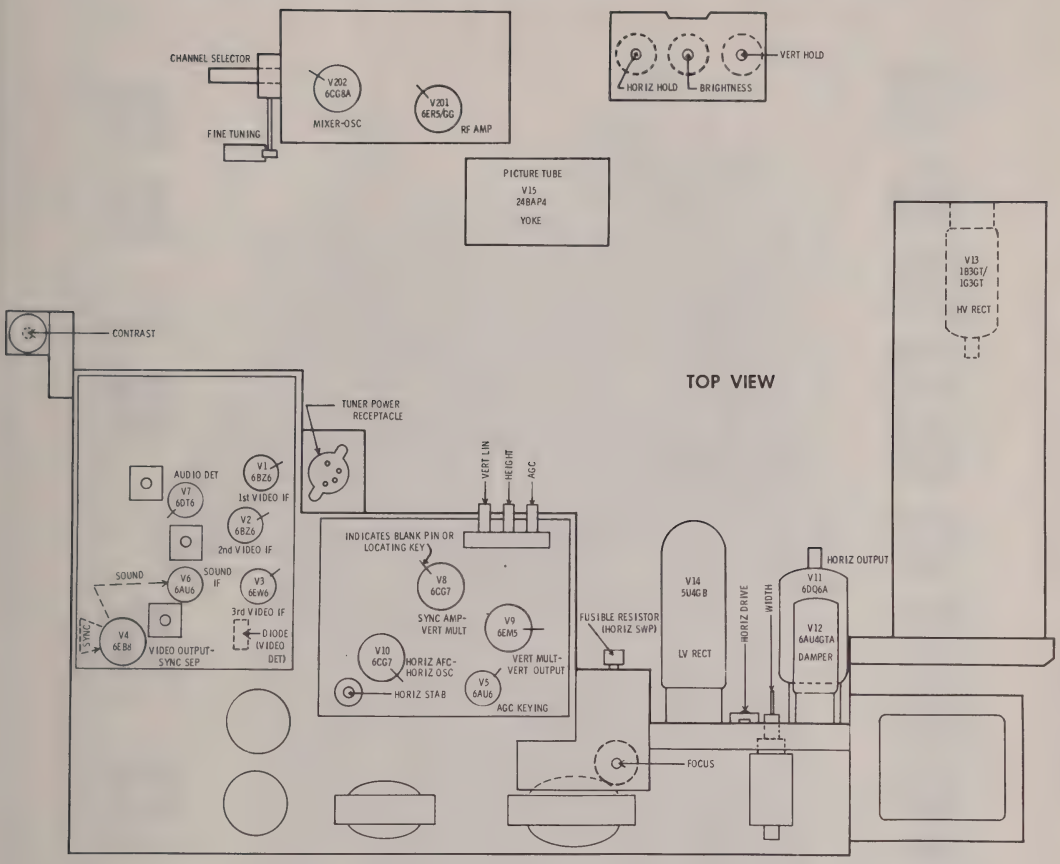
Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America


SOUND IF
6AU6
AUDIO DET
6DT6
AUDIO OUTPUT
TO STEREO AMP
1ST VIDEO IF
6BZ6
2ND VIDEO IF
6BZ6
3RD VIDEO IF
6EW6
VIDEO OUTPUT
6EB8
TO TUNER IF OUTPUT
TUNER FILS
CHANNEL LIGHT
TUNER LOW B+
TUNER B+
TUNER RF AGC
TERMINAL VIEW L11
CONTRAST
BRIGHTNESS
PICTURE TUBE
24BAP4
FOCUS
TO WIDTH COIL
AGC KEYING
6AU6
SYNC SEP
6EB8
SYNC AMP
6CG7
VERT MULT
6CG7
VERT MULT VERT OUTPUT
6EM5
DO NOT MEASURE
DEFLECTION YOKE
RED
WH-BLK
GRN
RED-WH-BLK
VERT. COILS
VERT. COILS EACH WINDING HORIZ. SEC.
BLUE
YEL
VERT LINEARITY
HEIGHT
VERT HOLD
AC POWER SOCKET FOR AM-FM TUNER AND STEREO AMP
LV RECT
5U4GB
TO PIN 7 OF YOKE SOCKET
CHEMICAL TYPE
275VA SOURCE
275VB SOURCE
200V SOURCE
150V SOURCE
HORIZ AFC
6CG7
HORIZ OSC
6CG7
HORIZ OUTPUT
6DQ6A
HV RECT
1G3GT
1B3GT
TO PICTURE TUBE HV ANODE (17.5KV-19KV) 28KV
DAMPER
6AU4GTA
COLOR DOT
TERMINAL GUIDE OF HORIZ OUTPUT TRANS.
HORIZ STABILIZER
HORIZ HOLD
HORIZ DRIVE
TERMINAL VIEW L20
TERMINAL VIEW L21
ADDITIONAL SCHEMATICS PAGE
VHF TUNER KRK6BT
With UHF Provisions 7
FM-AM TUNER Ch. RC1192B 8
AMP. Ch. RS171E 10
DENOTES CHASSIS GROUND
MEASURED FROM PIN 7 OF V2.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
1. DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
CIRCUITFACT
©Howard W. Sams & Co., Inc. 1960
RCA VICTOR MODELS 240-KV-7755U, 240-KV-7765U
(Ch. KCS127AE, RC1192B, RS171E)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

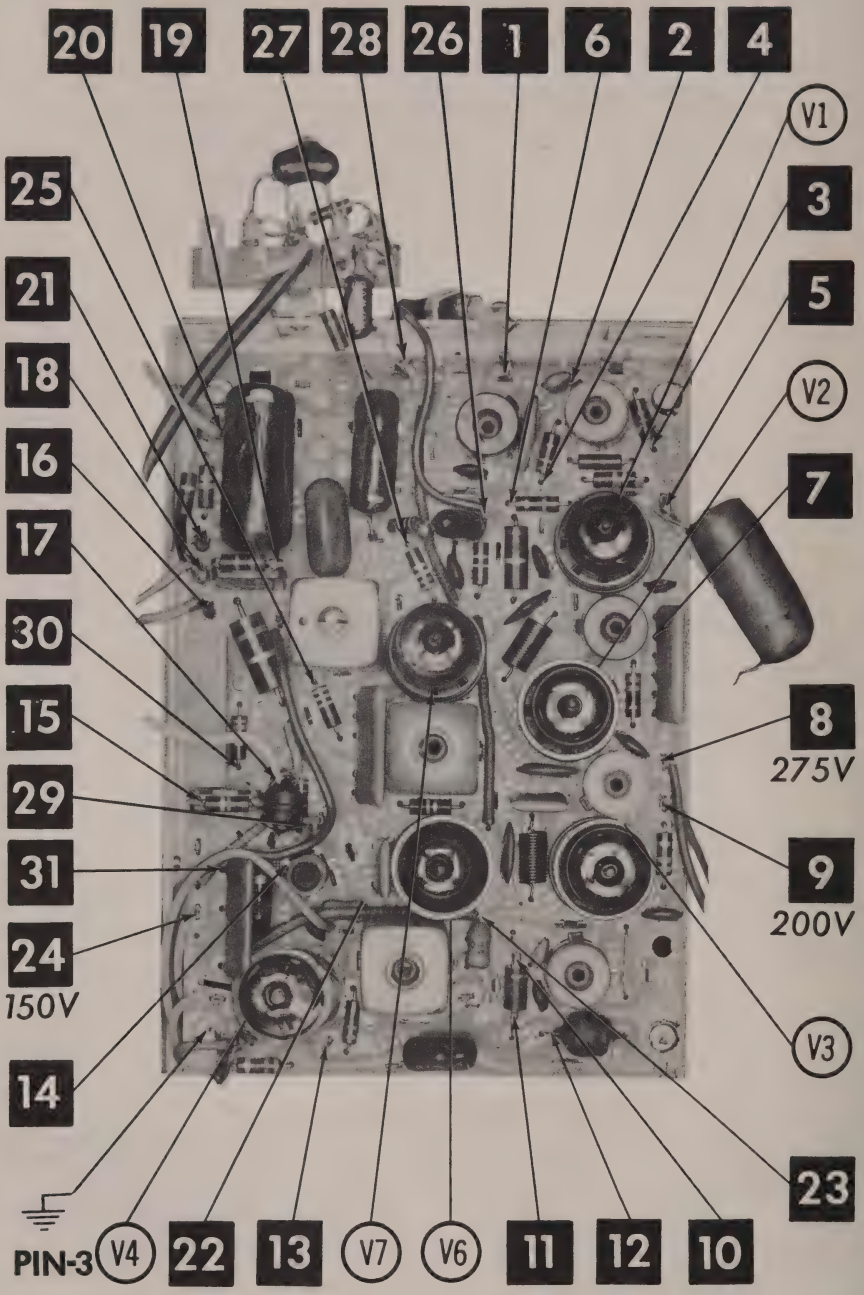
POWER SUPPLY FAILURE
No raster, no sound V14 , Fil. Fuses

SWEEP FAILURE
No raster, has sound V10, V11, V12, V13, V15, Fuse (Sweep)
No vertical deflection V8, V9
Poor vert. linearity or foldover V8, V9
Poor horiz. linearity or foldover V10, V11, V12, V14
Narrow picture V10, V11, V12, V14
Vert. off freq. V8
Horiz. off freq. V10

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V15
Has pic, no sound V6, V7, (Stereo Amp. Unit)
Overloaded picture V5

SYNC FAILURE
No vert. sync V4, V8
No horiz. sync V4, V8
No vert. or horiz. sync V4, V8

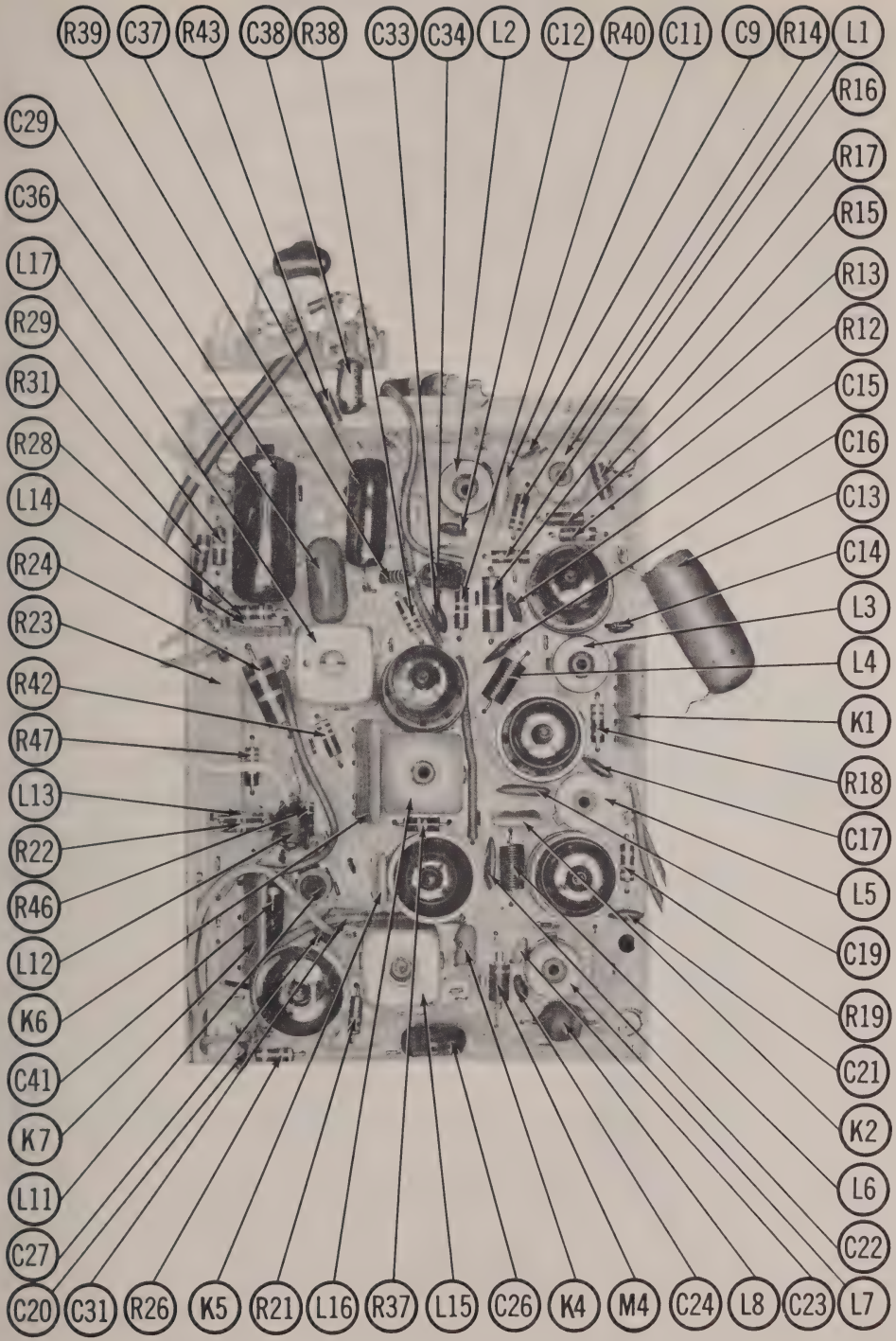
Circuitrace Numbers 1 thru 31



A Howard W. Sams CIRCUITRACE® Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VIDEO, SOUND, SYNC SEP. PRINTED BOARD



VIDEO, SOUND, SYNC SEP. PRINTED BOARD
SET 489 FOLDER 1

TUNER ALIGNMENT INSTRUCTIONS
VHF-UHF

PRE-ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A212 .... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A213, A214 ..... GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Set Fine Tuning to the center for each channel by pushing in on the Fine Tuning knob and turning fully clockwise, then counterclockwise three (3) full turns. Repeat for each channel to be adjusted.
Connect a 39 ohm composition resistor in series with a 1000mmf capacitor across the tuner output jack.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across VHF antenna terminals thru matching pad (See Fig. 201).	257MC	13	Vert. Amp. thru 10K to point Ⓤ. Low side to chassis.	A201	Adjust for zero beat.
	"	251MC	12	"	A202	"
	"	245MC	11	"	A203	"
	"	239MC	10	"	A204	"
	"	233MC	9	"	A205	"
	"	227MC	8	"	A206	"
	"	221MC	7	"	A207	"
	"	129MC	6	"	A208	"
	"	123MC	5	"	A209	"
	"	113MC	4	"	A210	"
	"	107MC	3	"	A211	"
	"	101MC	2	"	A212	"

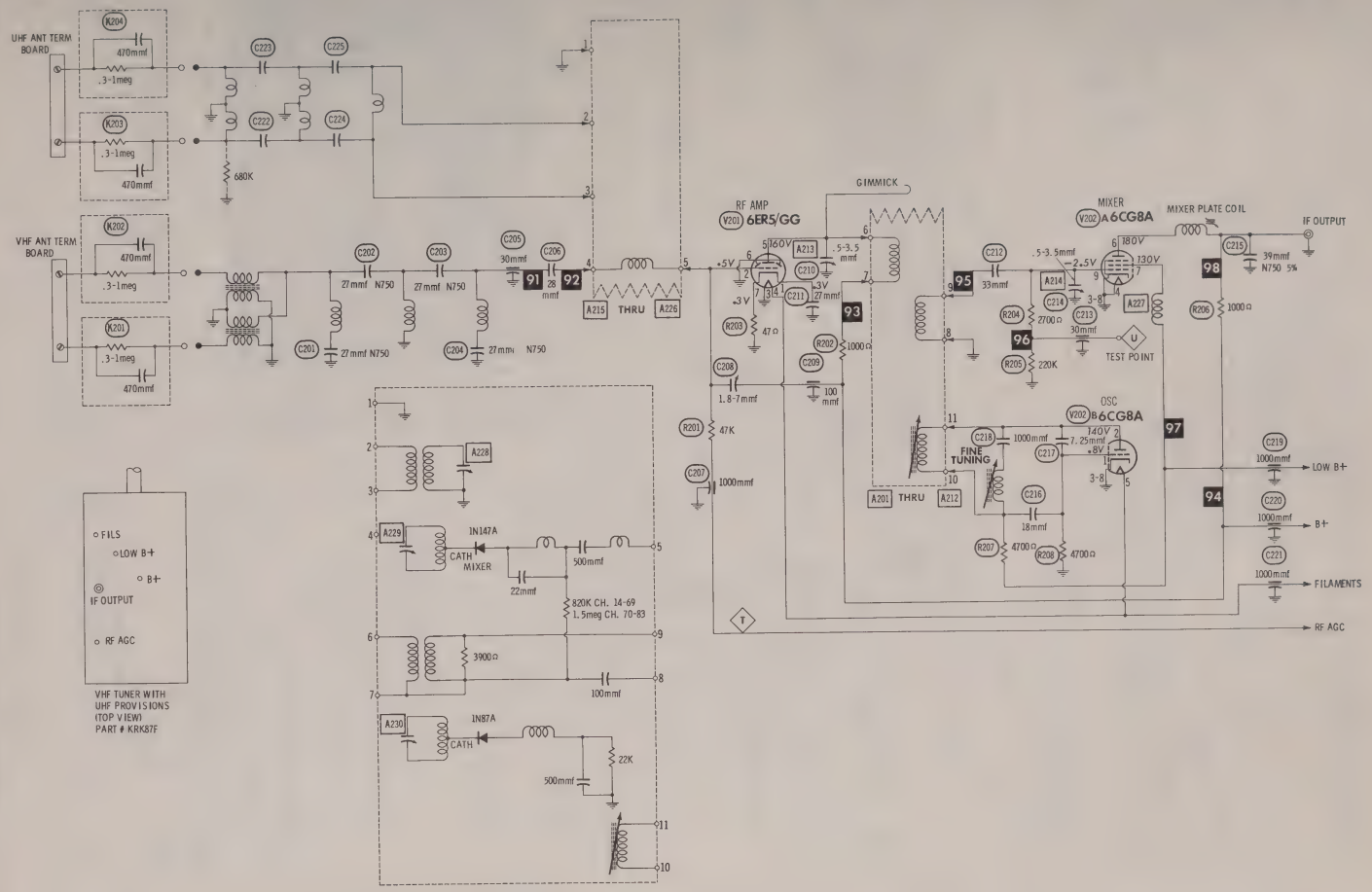
VHF RF AND MIXER ALIGNMENT

Connect Bias as under "VHF Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Leave tuner output jack terminated as under "VHF Oscillator Alignment".

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
2.	Across VHF antenna terminals thru matching pad (Fig. 201).	195MC (10MC Swp.)	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point Ⓤ. Low side to chassis.	A213, A214	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown.
	"	213MC	211.25MC 215.75MC	13	"	A215	If necessary, adjust to correct for improper tilt.
	"	207MC	205.25MC 209.75MC	12		A216	Adjust by expanding or compressing coil turns.
	"	201MC	199.25MC 203.75MC	11		A217	"
	"	195MC	193.25MC 197.75MC	10		A218	"
	"	189MC	187.25MC 191.75MC	9		A219	"
	"	183MC	181.25MC 185.75MC	8		A220	"
	"	177MC	175.25MC 179.75MC	7		A221	"
	"	85MC	83.25MC 87.75MC	6		A222	"
	"	79MC	77.25MC 81.75MC	5		A223	"
	"	69MC	67.25MC 71.75MC	4		A224	"
	"	63MC	61.25MC 65.75MC	3		A225	"
	"	57MC	55.25MC 59.75MC	2		A226	"

If bandwidth is out of limits on most high VHF channels (7-13), adjust A227 by expanding or compressing coil turns.

CONTINUED ON PAGE 27



A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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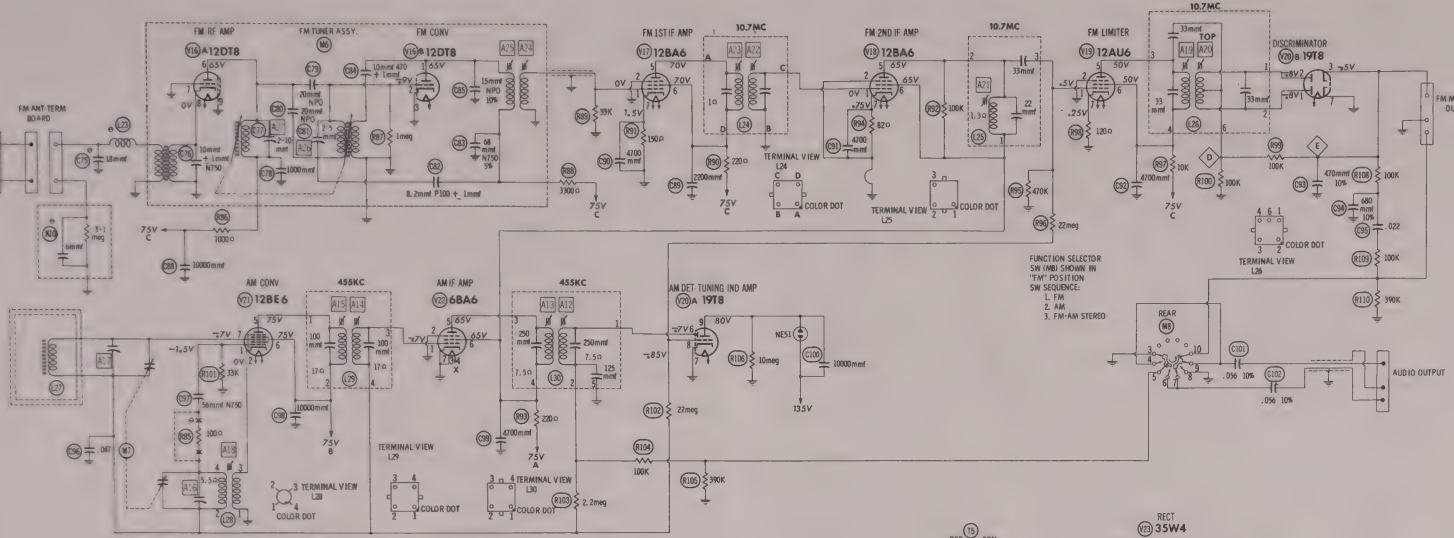
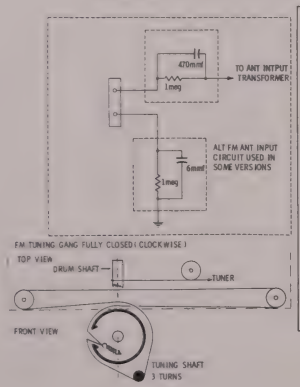
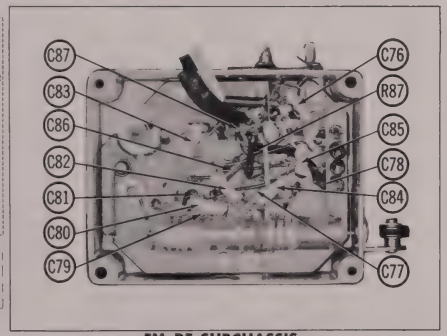
VHF TUNER With UHF Provisions - KRK-87F

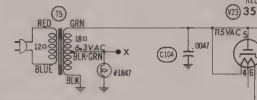
RCA VICTOR MODELS 240-KV-775SU, 240-KV-776SU
(Ch. KCS127AE, RC1192B, RS1716)







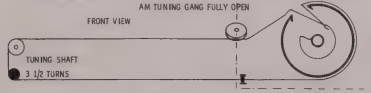
FM RF SUBCHASSIS

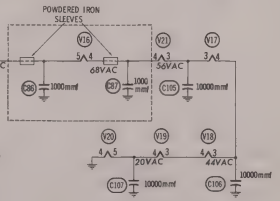


RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V16	12DT8	↑4500Ω	1meg	0Ω	38Ω	35Ω	↑2200Ω	0Ω	.3Ω	0Ω
V17	12BA6	1.8Ω	0Ω	37Ω	33Ω	↑1400Ω	↑1400Ω	150Ω		
V18	12BA6	.6Ω	0Ω	33Ω	28Ω	↑1400Ω	↑1400Ω	82Ω		
V19	12AU6	470K	0Ω	28Ω	15Ω	↑11K	↑11K	120Ω		
V20	19T8	100K	100K	200K	0Ω	15Ω	490K	0Ω	11meg	10meg
V21	12BE6	33K	.6Ω	37Ω	38Ω	↑▲1200Ω	↑▲1200Ω	2.7meg		
V22	6BA6	2.7meg	0Ω	0Ω	.4Ω	↑▲1400Ω	↑▲1400Ω	0Ω		
V23	35W4	NC	NC	35Ω	18Ω	18Ω	25Ω	¶		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN "AM" POSITION.
NC NO CONNECTION
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
↑ MEASURED FROM PIN 7 OF V23.





A PHOTOFACT STANDARD NOTATION SCHEMATIC
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FM-AM TUNER CH. RC1192B

FM-AM ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Loudness control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Suggested Alignment Tools: A12, A13 ..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A14, A15, A19 thru A23. GENERAL CEMENT #5097, 8727
WALSCO #2515
A16, A17 ..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A18 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519
A26, A27 ..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

AM ALIGNMENT - SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .01mfd to pin 7 (grid) of AM Conv. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A12, A13, A14, A15	Adjust for maximum output.
2.	Loop	1620KC	"	"	A16	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	Tune to 1400KC signal	"	A17	"
4.	"	600KC	Tune to 600KC signal		A18	Adjust for maximum output while rocking tuning gang. Repeat steps 4 and 5.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	High side thru .01mfd to pin 1 (grid) of FM Limiter. Low side to chassis.	10.7MC (Unmod.)	FM Point of non-interference	DC probe thru 1meg to point Ⓓ. Common to chassis.	A19	Adjust for maximum deflection,
6.	"	"	"	DC probe to point Ⓔ. Common to chassis.	A20	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
7.	Across FM antenna terminals.	"	"	DC probe thru 270K to pin 1 (grid) of FM Limiter. Common to chassis.	A21	Adjust for maximum deflection.
8.	"	"	"	"	A22, A23	"
9.	"	"	"	"	A24, A25	"

Alternate loading may be required for accurate peaking. The winding not being adjusted should be loaded with 270Ω in step 8 and 47Ω in step 9.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE - SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	High side thru .01mfd to pin 1 (grid) of FM Limiter. Low side to chassis.	10.7MC (450KC Swp)	FM Point of non-interference	Vert. Amp. thru 47K to point Ⓓ. Low side to chassi chassis.	A19	Adjust for maximum gain and symmetry of response similar to Fig. 6 with markers as shown.
6.	"	"	"	Vert. Amp. thru 47K to point Ⓔ. Low side to chassis.	A20	Adjust to place marker at the center of crossover lines similar to Fig. 7. SLIGHTLY retouch A19 for maximum amplitude and straightness of crossover lines.
7.	Across FM antenna	"	"	Vert. Amp. thru 270Ω to pin 1 (grid) of FM Limiter. Low side to chassis.	A21	Adjust for maximum gain and symmetry of response similar to Fig. 6 with markers as shown.
8.	"	"	"	"	A22, A23	"
9.	"	"	"	"	A24, A25	"

10.7MC

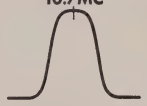


FIG. 6

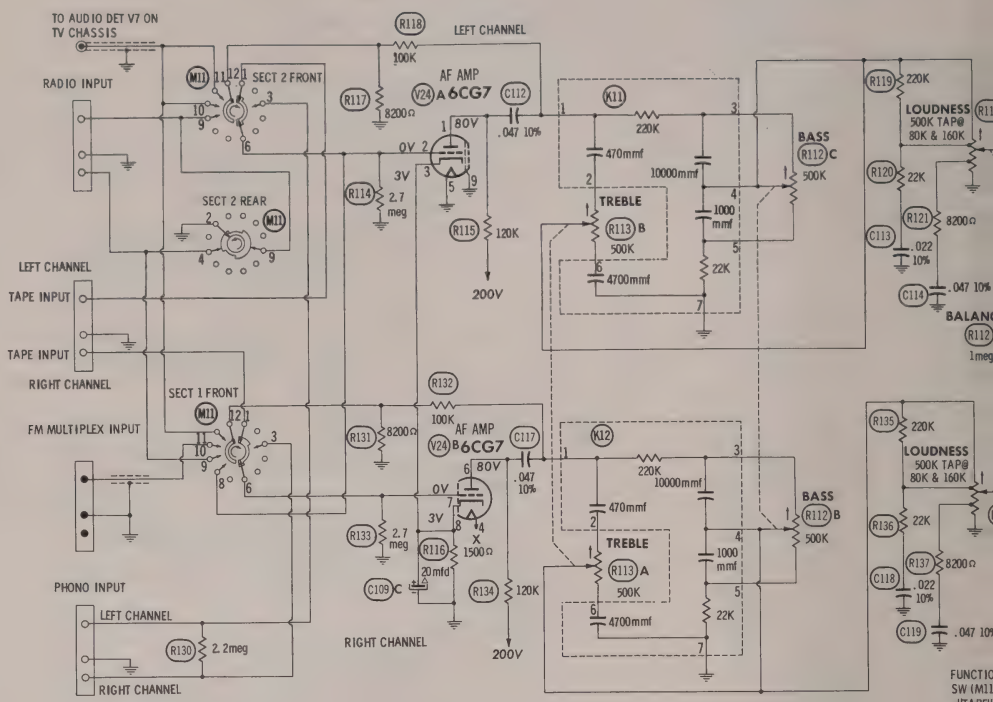
10.7MC

FIG. 7

Alternate loading may be required for accurate peaking. The winding not being adjusted should be loaded with 270Ω in step 8 and 47Ω in step 9.

FM RF ALIGNMENT - SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
10.	Across FM antenna	87.5MC (Unmod.)	FM Tuning gang fully closed	DC probe thru 270K to pin 1 (grid) of FM Limiter. Common to chassis.	FM Tuner String Drive Collar	Loosen set screw and adjust collar for maximum output. Tighten set screws.
11.	"	108.5MC	Tuning gang fully open	"	A26	Adjust for maximum deflection.
12.	"	95MC	Tune to 95MC signal	"	A27	"



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V24	6CG7	†135K	2.7meg	1500Ω	.1Ω	0Ω	†135K	2.7meg	1500Ω	0Ω
V25	6CG7	†135K	0Ω	1500Ω	.1Ω	0Ω	†135K	0Ω	1500Ω	0Ω
V26	6CG7	†105K	470K	3300Ω	.1Ω	0Ω	†105K	470K	3300Ω	0Ω
V27	6BQ5	470K	470K	68Ω	.1Ω	0Ω	NC	†270Ω	NC	†1200Ω
V28	6BQ5	470K	470K	68Ω	.1Ω	0Ω	NC	†270Ω	TP	†1200Ω
V29	5Y3GT	NC	¶	NC	100Ω	NC	95Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V29.
NC NO CONNECTION TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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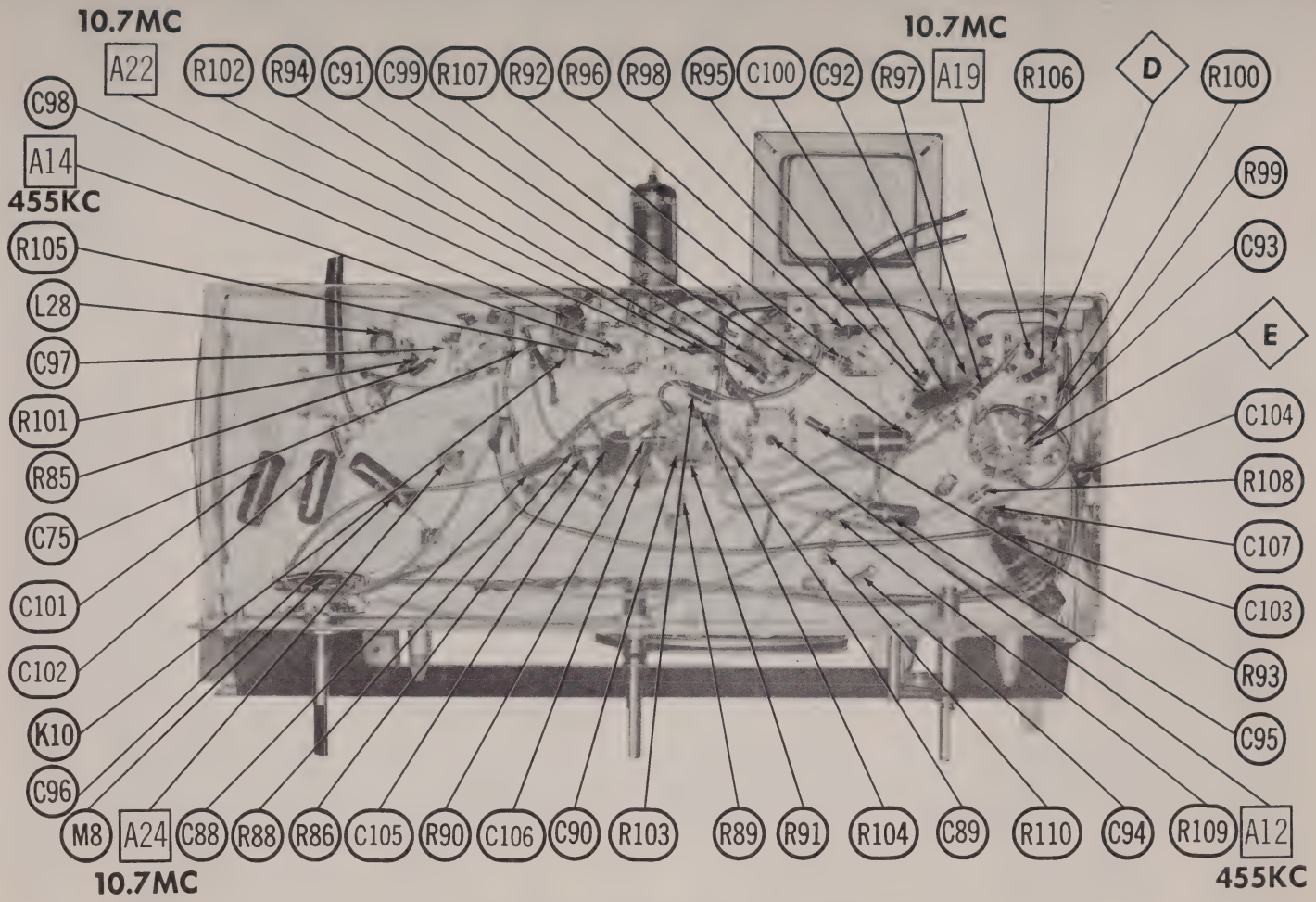


FM-AM TUNER CHASSIS - BOTTOM VIEW

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.
Disable the Horizontal Output circuit by connecting a 150Ω 10W resistor in series with the plate lead of the Horizontal Output tube. Connect the negative lead of a 12.5 volt bias supply from pin 5 (grid) of the Horizontal Output tube. Connect positive lead to chassis.
Suggested Alignment Tools: A1 thru A5, A7, A8, A9, A11 .... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A6 ..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A10 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519

VIDEO IF ALIGNMENT

Connect the negative lead of a 4 volt bias supply to point Ⓐ. Positive to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	1500mmf Ceramic Capacitor	High side to Mixer grid wafer contact thru access hole (adjacent to Mixer grid wafer) located in left side of tuner shield. Low side to chassis.	44.5MC (Unmod)	Any non-interfering channel	DC probe to point Ⓑ. Common to chassis. (Across Video Det. load).	A1	Adjust for maximum deflection. Adjust generator output for 3 volts on meter when finally peaked.
2.	"	"	45.5MC	"	"	A2	"
3.	"	"	43.0MC	"	"	A3	"
4.	"	"	47.25MC	"	"	A4	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a 180Ω resistor from pin 5 (plate) to pin 6 (screen) of the 1st Video IF Amp.
Couple signal generator loosely to sweep output cable to provide markers.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	1500mmf Ceramic Capacitor	High side to Mixer grid wafer contact thru access hole (adjacent to Mixer grid wafer) located in left side of tuner shield. Low side to chassis.	45.0MC (10MC Swp)	42.5MC 45.75MC	4	Vert. Amp. thru demodulator probe to pin 5 (plate) of 1st Video IF Amp. Low side to chassis. Calibrate scope for 0.5 volts peak to peak.	A5, A6, & Mixer Plate Coil	Adjust Mixer Plate Coil and A5 for maximum gain, using A6 to obtain curve shape with markers as shown in Fig. 1. Remove 180Ω resistor.
6.	"	"	"	42.5MC 45.0MC 45.75MC	"	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis. (Across Video Det. load). Calibrate scope for 5 volts peak to peak.	A1, A2, A3	Check for response similar to Fig. 2. If necessary, retouch A1, A2 and A3 for desired response.
7.	Fig. 3	High side thru pad (Fig. 3) to Mixer grid wafer contact thru access hole (adjacent to Mixer grid wafer) located in left side of tuner shield. Low side to chassis.	Not used	45.75MC	"	USE VTVM DC probe to point Ⓑ. Common to chassis.		Adjust generator output to provide exactly 1.5 volts on VTVM.
8.	1500mmf Ceramic Capacitor	Remove pad. High side to Mixer grid wafer contact thru access hole (adjacent to Mixer grid wafer) located in left side of tuner shield. Low side to chassis.	45.0MC (10MC Swp)	41.25MC	"	Leave VTVM connected. Connect scope as in step 6.	A1, A3	Retouch A1 and A3 for 1.0 to 1.5 volts on VTVM while maintaining response similar to Fig. 2.
9.	Fig. 4	Across antenna terminals thru matching network (Fig. 4).	Each VHF Channel in turn	42.5MC 45.75MC 47.25MC	All VHF Channels	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis.	A1, A2	Check for response similar to Fig. 2. Retouch A1 and A2 SLIGHTLY to correct for tilt or other conditions that are approximately the same on all channels.

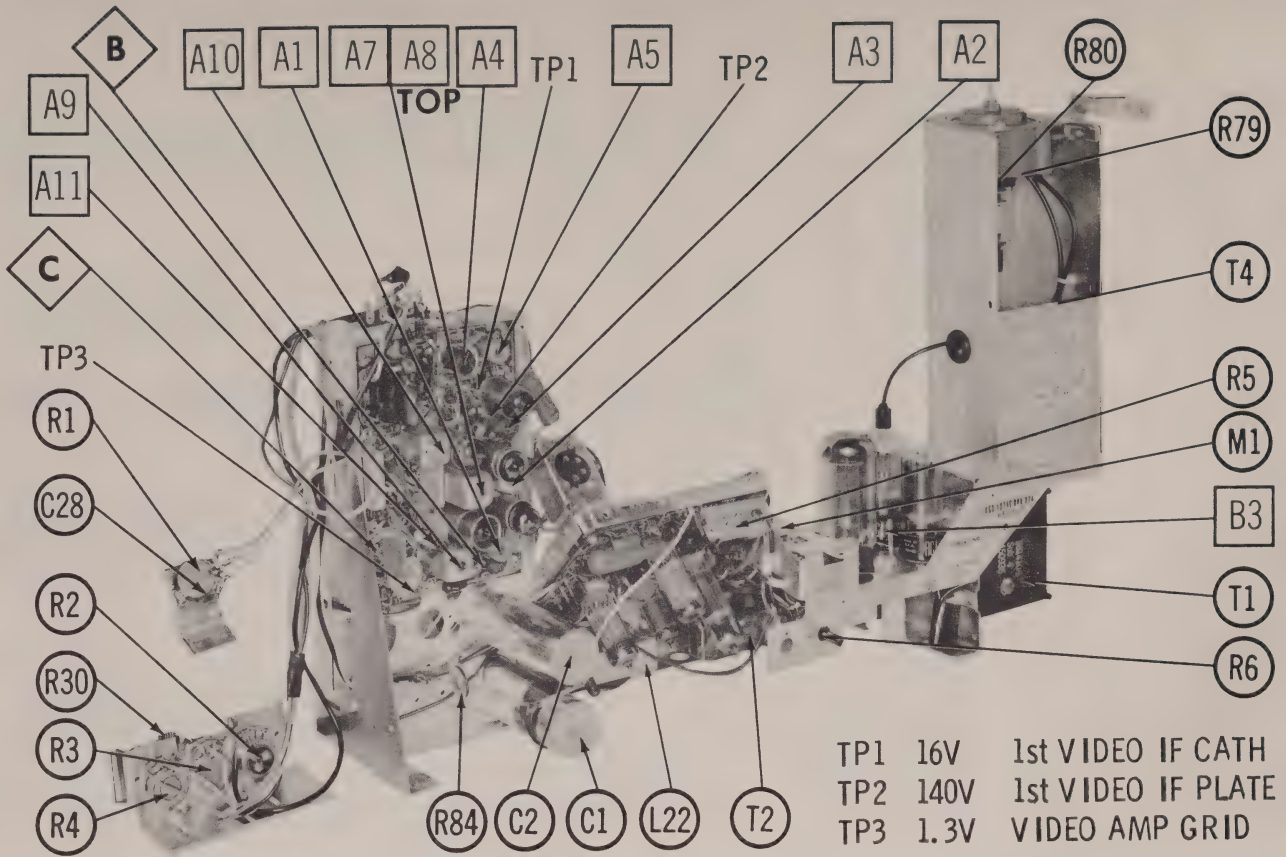
SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point Ⓐ. Positive to chassis.
Set Contrast fully clockwise.
Set VTVM for negative voltage readings.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001mfd	High side to point Ⓑ. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 7 (grid 3) of Audio Detector. Common to chassis.	A7, A8, A9	Adjust for maximum negative voltage on meter. Attenuate generator for a reading between 1.0 and 1.5 volts on meter when finally peaked. Peak A7 and A8 with maximum core separation. Adjust A9 for maximum deflection.

11. Remove VTVM and diode probe. Connect scope across Volume control. Turn off signal generator and tune in the strongest TV station in the area and adjust Volume control for normal volume. Preset coil slug (A10) flush with the top of coil form. While observing scope and listening to the sound, adjust A10 clockwise to a peak. Continue turning clockwise to a second louder peak and adjust for maximum on this second peak.

Continued on Page 21



TV CHASSIS - REAR VIEW

(Ch. KCS127AE, RC1192B, RS1716)

RCA VICTOR MODELS 240-KV-775SU, 240-KV-776SU

TV
PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V8	Sync Amp.-Vert. Mult.	6CG7
V2	2nd Video IF Amp.	6BZ6	V9	Vert. Mult.-Vert. Output	6EM5
V3	3rd Video IF Amp.	6EW6	V10	Horiz. AFC-Horiz. Osc.	6CG7
V4	Video Output-Sync. Sep.	6EB8	V11	Horiz. Output	6DQ6A
V5	AGC Keying	6AU6	V12	Damper	6AU4GTA
V6	Sound IF	6AU6	V13	H. V. Rect.	1B3GT/1G3GT
V7	Audio Det.	6DT6	V14	L. V. Rect.	5U4GB

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V15	24BAP4		24BAP4①			① Aluminized

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	▲100	400	107326	AFH3-155-60	C1114	FP389.1	TMT-186 TD-20-450	TVL-3819	
B	■20	400							
C	▲10	350							
C2A	▲100	400	107326	AFH3-155-60	C1114	FP389.1	TMT-186 TD-20-450	TVL-3819	
B	■20	400							
C	▲10	350							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	39000			DD-403	BYB6S4	6DP-3-403	GP140	5HK-S40
C4	39000			DD-403	BYB6S4	6DP-3-403	GP140	5HK-S40
C5	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C6	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C7	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C8	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C9	8 NPO .5mmf		NPO-DI 8.2		C10V8C			10TCC-V82
C10	1.5-6	#107177		829-6				
C11	100 NPO 5%			DTZ-100	C10T1C	CCTO-101	CNO-310	10TCC-T10
C12	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C14	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C15	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C16	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-047
C17	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C20	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C22	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-347	5HK-D47
C23	7 NPO .5mmf		NPO-DI 6.8	DTZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C24	5 NPO 5%		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C25	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	.0047 600V 10%		V84C6D47-10%		PM6D47	6DP-1-472		6TM-D47
C27	12 NPO			TCZ-12	C10Q12C	CCTO-120	CNO-412	10TCC-Q12
C28	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C29	.22 600V		P688N-22		CUB6P22	6DP-5-224	GEM-6022	6TM-P22
C30	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C31	3 N750 10%			TCN-3R3			CN7-533	10TCU-V33
C32	2700		DI-2700	DD-272	BYA10D27	CCD-272	B-227	10TS-D27
C33	560		DI-560	DD-561	L10T56	CCD-561	B-356	10TS-T56
C34	.0039 600V 10%		V84C6D4-10%		PM6D4	6DP-1-392		6TM-D4
C35	47		BPD-000047	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C36	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C37	.1 200V 10%		V84C2P1-10%		PM2P1	2DP-3-104		2TM-P1
C38	.001 600V 10%		V84C6D1-10%		PM6D1	6DP-1-102		6TM-D1
C39	.001 600V 10%		V84C6D1-10%		PM6D1	6DP-1-102		6TM-D1
C40	.0033 600V 10%		V84C6D33-10%		PM6D33	6DP-1-332		6TM-D33
C41	.0033 600V 10%		V84C6D33-10%		PM6D33	6DP-1-332		6TM-D33
C42	.033 400V		P488N-033	DD-303	CUB6S33	4DP-2-333	GEM-4133	6TM-S33
C43	220 10%		1469-00022	TCZ-220	22R5T22	CM-19B-22K	MCB237	MS-322
C44	.0082 400V 10%		P684CM-0082			6DP-1-822		5BF-D82
C45	.01 400V 10%		V84C4S1-10%		PM4S1	4DP-1-103		4TM-S1
C46	.0056 400V 10%					6DP-1-562		5BF-D56
C47	.01 400V 10%		V84C4S1-10%		PM4S1	4DP-1-103		4TM-S1
C48	.039 600V 10%		P684CM-039		PM6S4	6DP-3-393		6TM-S4
C49	.012 400V 10%					6DP-2-123		5BF-S12
C50	.15 200V 10%	Note 1	V84C2P15-10%		PM2P15	2DP-3-154		2TM-P15
C51	.022 600V		P688N-022	DD-203	CUB6S22	6DP-5-223	GEM-6122	6TM-S22
C52	.027 600V 10%		P684CM-027		PM6S3	6DP-3-273		6TM-S3
C53	1000 2000V		HVO-30-1000	DD30-102	HVB20D1	3CCD-102	2HV-210	30GA-D10
C54	33 NPO		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C55	.022 200V		P288N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	2TM-S22
C56	.47 200V		P288N-47		CUB4P47	2DP-5-474	GEM-2047	2TM-P47
C57	.47 200V		P288N-47		CUB4P47	2DP-5-474	GEM-2047	2TM-P47
C58	470 1000V 5%					VCM-20-471J		
C59	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S1
C60	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C61	220 N750 10%		N750-DI 220	DTN-220	C10T22U	CCTN-221	CN7-322	10TCU-T22

TV
PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	EMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C62	270		BPD-00027	DD-271	L10T27	CCD-271	B-327	10TS-T27
C63	820 10%		1469-00082		1R5T82	CM-19B-821K	MCB251	MS-382
C64	10-160	#100849				463		
C65	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C66	.27 200V 10%		V84C2P25-10%			2DP-4-254		2TM-P25
C67	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104		4TM-P1
C68	.1 600V 10%		V84C6P1-10%		PM6P1	6DP-4-104		4TM-P1
C69	.039 400V 10%		P684CM-039		PM6S4	6DP-3-393		6TM-S4
C70	110 1500V 10%	#103536						
C71	82 2000V 10%	#107419					2DY-482	
C72	110 1500V 10%	#103536						
C73	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47

RCA Victor Part Number. Note 1. May not be used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1 A	30K	1/2	107608				UT-415	Contrast, Tap @ 20K
B	Shaft						DS-37	
R2	40K	1/2	107333					Horiz. Hold
R3A	200K	1/2	107331	AB-46	A47-200K-S	B11-129	U43	Brightness
B	Shaft			AK-8	RS-3/16	SK9	DS-37	
R4A	1.5meg	1/2	107332	AB-742	A47-1.5meg-S	B11-138	U155	Vert. Hold
B	Shaft			AK-8	RS-3/16	SK9	DS-37	
R5A	200K	1/4	107397					AGC
B	4meg	1/4						Height
C	1.5meg	1/4						Vert. Linearity
D	100K	1/4						AGC Clamp Coupling
E	47K	1/4						AGC Grid Decoupling
F	1meg	1/4						Vert. Mult. Plate
G	1.3meg	1/4						Vert. Mult. Grid
H	470K	1/4						Vert. Output Grid
I	600K	1/4						Vert. Linearity Limiter
R6A	5meg	1/2	107384	AB-87	B47-5meg-S	B11-141	PTA56L	Focus
B	Shaft			AK-19	Not Req.	TM4	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R7	18K 2W	
R8	4700Ω 5W	
R9	220K 1W	
R10	180K	
R11	2.2meg	
R12	120K	
R13	1000Ω	
R14	6800Ω	
R15	15K	
R16	56Ω	
R17	1200Ω 1W	
R18	33Ω	
R19	470Ω	
R20	3900Ω	
R21	330Ω	
R22	10K	
R23	6800Ω 5W	#107025
R24	1800Ω 2W	
R25	18K 2W	(470K) *
R26	47Ω	
R27	82K 1W	Note 1
R28	6800Ω	
R29	120K	
R30	470K	
R31	1meg	
R32	470K	

ITEM No.	RATING	REMARKS
R33	100K	
R34	2700Ω	
R35	3300Ω	
R36	560K	
R37	100K	
R38	680K	
R39	68K	
R40	220K	
R41	10K	
R42	470K	
R43	2meg	
R44	2meg	
R45	1.8meg	
R46	47K	
R47	68K	
R48	33K	
R49	2.2meg	
R50	39K	
R51	10K 1W	
R52	68K	
R53	18K	
R54	6.8meg	
R55	15K	
R56	22K	
R57	3900Ω	Note 1
R58	22K 1W	

ITEM No.	RATING	REMARKS
R59	8200Ω	
R60	220Ω 5W	#107048
R61	3300Ω	
R62	470K	
R63	220K	
R64	82K	
R65	150Ω	
R66	3.5Ω(cold)	#107464
R67	150Ω	
R68	330K	
R69	180K	
R70	3300Ω	
R71	68K 1W	
R72	56K	
R73	270K	
R74	1meg	
R75	47Ω	
R76	6800Ω 3W	
R77	100Ω 5W	Note 2
R78	470K	
R79	.68Ω	
R80	1000Ω	
R81	2700Ω 5W	#102789A
R82	1800Ω 2W	
R83	820K	
R84	120Ω (cold)	#107191

* Alternate
Note 1. May not be used in some versions.
Note 2. Some versions may use 100Ω 7W (Part #104188).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		RCA Victor PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	1st Video IF	107202						
L2	47.25MC Trap	107203						
L3	2nd Video IF	104233						
L4	Fil. Choke							
L5	3rd Video IF	107204						
L6	Fil. Choke							
L7	4th Video IF	104233						
L8	Series Peaking Coil	101819	19-3036	19-3036	TV-180	6176	VP-1	36uh
L9	Shunt Peaking Coil	101287	19-3250	19-3250	TV-185	6181	VP-6	250uh
L10	RF Choke	107463	19-1002	19-1002	SW-630	4606		2.7uh
L11	4.5MC Trap	104903						
L12	Shunt Peaking Coil	101819	19-3036	19-3036	TV-180	6176	VP-1	36uh

TV PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF) (cont)

ITEM No	USE	REPLACEMENT DATA						NOTES
		RCA Victor PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L23	Series Peaking Coil	107199			TV-207	6156		750uh
L24	Series Peaking Coil	104203	19-3300	19-3300	TV-199	6155		300uh
L25	1st Sound IF	104126						
L26	2nd Sound IF	107301						
L27	Quadrature Coil	106796						
L28	RF Choke	107285	19-1009	19-1009		4611		8.2uh
L29	RF Choke	107285	19-1009	19-1009		4611		8.2uh

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	
L30A B	44Ω 44Ω		107384						Horiz. Osc. Tap @ 34Ω Horiz. Stabilizer

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA								
		RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L31	Width Coil Pri.-0.7Mh(-12MH) Sec.-(.1MH)	108330								

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT (1000 ~(.)	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L32	.280A	40Ω	1.2A	77676				C-2343 ①		26C44

② Drill new mtg. hole.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ 1.8A	570VCT @ 280A	5V @ 3A	107377				P-8356 ②		R-80BC ①
	SEC. 3	SEC. 4	SEC. 5							
	6.3V @ 8.5A									

① Tape 2A (6.3V) winding. Parallel and phase 3A and 5A (6.3V) winding. ② Drill new mtg. holes.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert. Output	107327	26S4	A-2815	V319		26S4		A-140X
T3	Yoke Horiz.-(28MH) (110°) Vert.- (19MH)	107933 ①	Y-47 ②		Y-111 ②		DY-26A ③	Y-47 ③	Y-80-2
	Rear Cover and Centering Device	107192							YC110
	Yoke Clamp	104409							CL-1
T4	Horiz. Output	107598							

① Includes R85, R86, R87, C70, C71 & C72. ③ Use original rear cover and centering device.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K1	1st Video IF Grid	1000mmf, 1000mmf, 220Ω, 220Ω, 15K, 150K, 150K	107277	
K2	3rd Video IF Cath.	4700mmf, 125Ω	107279	
K3	Vert. Blanking	4700mmf, 22K	107283	
K4	Sound IF Grid	56mmf, 47K	104326	Centralab BC-421
K5	Sound IF Cath.	10000mmf, 82K	107278	Sprague PRC-18
K6	Audio Detector Cath.	10000mmf, 10000mmf, 560Ω, 220Ω, 4700Ω	107276	
K7	Sync Sep. Grid	150mmf, 270K, 2.2meg, 2.7meg	107200	
K8	Sync Amp. Grid	560mmf, 27K	107492	
K9	Yoke Damping	330mmf, 560mmf, 820mmf, 4700Ω	107544	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RCA Victor PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	Chemical	3/10A	104296 ①	104534				
M2	1 1/4" length #29 wire							
M3	1 1/4" length #28 wire							

① Fusible resistor type.

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M4	1N60	76678B	1N60	1N60	1N60	Video Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M5	Tuner Printed Board Printed Board	107795 107982 107347	VHF/UHF (KRK27F), Standard Coil replacement #GG4230A Video (Less Tubes) Deflection (Less Tubes)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO	DESCRIPTION
Mask	107943	Picture Tube
Safety Glass	107665	
Knob	107738	Channel Selector
Knob	106596	Fine Tuning
Knob	107940	Volume, Treble
Knob	107486	Brightness
Knob	107943	Contrast
Knob	107490	Vertical Hold
Knob	107489	Horizontal Hold
Knob	106478	Bass
Knob	107939	Balance
Knob	107941	FM-AM

WIRING DATA

High Voltage Lead	Use BELDEN No. 8969
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8674
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8484 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

FM AM TUNER

TUBES

ITEM No.	CBS / GENERAL ELECTRIC		ITEM No.	RAYTHEON / SYLVANIA	
	USE	TYPE		USE	TYPE
V16	FM RF Amp.-FM Conv.	12DT8	V21	AM Converter	12BE6
V17	1st FM IF Amp.	12BA6	V22	AM IF Amp.	6BA6
V18	2nd FM IF Amp.	12BA6	V23	Rectifier	35W4
V19	FM Limiter	12AU6			
V20	FM Discriminator-AM Det.-Tuning Ind. Amp.	19T8			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C74A B	80 50	150 150	73520	AFH3-19	XBO1S1	FP26	TMD-17	TVL-3442.1	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C75	18		Note 1	DE-18	DD-180	CD1Q8	CCD-180	GP418	10TS-Q18
C76	10	N750 ±1mmf		N750-S1 10	TCN-10	CD1Q1U	CCTN-100	CN7-410	10TCU-Q10
C77	2-10								
C78	1000			BPD-001	DD-102	BYA10DI	CCD-102	B-2I0	5HK-D10
C79	30	NPO		NPO-S1 30	TCZ-30	C1QQ2C	CCTO-300	CNO-430	10TCC-Q30
C80	20	NPO		NPO-S1 20	TCZ-20	C1QQ2C	CCTO-200	CNO-420	10TCC-Q20
C81	2-5								
C82	8.2	P100 ±1mmf							
C83	68	N750 5%			TCZ-68	C1QQ68U	CCTN-680	CN7-468	10TCU-Q68
C84	10	470 ±1mmf			"	"	"	"	
C85	15	NPO 10%		NPO-S1 15	TCZ-15	C1QQ15C	CCTO-150	CNO-415	10TCC-Q15

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C86	1000		BI 1000	DD-102	BYA10DI	CCD-102	B-2I0	5HK-D10
C87	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-2I0	5HK-D10
C88	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10
C89	2200		BPD-0022	DD-222	BYA10J22	CCD-222	B-2J3	5HK-D22
C90	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C91	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C92	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C93	470 10%			DD-471	BR5T47	CCD-471	GP347	10TS-T47
C94	680 10%			DD-681	BR5T68	CCD-681	GP368	10TS-T68
C95	.022 200V		P288N-022	DD-303	CUB4S22	6DP-2-223	GEM-4123	2TM-S22
C96	.047 400V		P488N-047	DD-503	CUB4S47	6DP-3-473	GEM-4147	4TM-S47
C97	56 N750		N750-S1 56	TCN-56	C1Q56U	CCTN-560	CN7-456	10TCU-Q56
C98	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10
C99	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C100	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10
C101	.056 200V 10%		P564CM-057		BR5T56	6DP-3-563		5BF-S56
C102	.056 200V 10%		P564CM-057		BR5T56	6DP-3-563		5BF-S56
C103	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-4147	6TM-S47
C104	.0047 400V		P488N-0047	DE-472	CUB1D47	6DP-1-472	GEM-4247	6TM-D47
C105	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10
C106	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10
C107	10000		BPD-01	DD-103	BYA10BI	CCD-103	B-1I0	5HK-S10

Note 1. Some versions may use capacitor-resistor component combination for C75 & L23.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise stated.

ITEM No.	RATING	REMARKS
R85	100Ω	Note 1.
R86	1000Ω	
R87	1meg	
R88	3300Ω	
R89	33K	
R90	220Ω	
R91	150Ω	
R92	100K	
R93	220Ω	

ITEM No.	RATING	REMARKS
R94	82Ω	
R95	470K	
R96	33meg	
R97	10K	
R98	12KΩ	
R99	100K	
R100	100K	
R101	33K	
R102	22meg	

ITEM No.	RATING	REMARKS
R103	2.2meg	
R104	100K	
R105	390K	
R106	10meg	
R107	12KΩ 2W	
R108	100K	
R109	100K	
R110	390K	

Note 1. May not be used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		RCA Victor PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L33	FM Ant. Coil	?						
L34	2nd FM IF Trans.	77513	16-3472	16-3472		1451		
L35	3rd FM IF Trans.	77512						
L36	Discriminator	77511	17-3494	17-3494	FM-253	1464		
L37	Loopstick	108411	14-7002	14-7002	BC-418	705-A		
L38	AM Osc. Coil	79057			BC-393	71-OSC		
L39	1st AM IF Trans.	77416	16-6758	16-6758	BC-352	13-C1	RF-1	
L30	2nd AM IF Trans.	76328	16-6770	16-6770	BC-355	13-C6		

† Some versions may use capacitor-resistor component combination for L23 and C75.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1		RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T5	117V @ .35A	118V @ .250A Tap @ 6.3V @ .45A		104609						

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K10	FM Antenna Filter	6mmf, .3-1meg		Note 1

Note 1. Some versions may use component combination (Part #104328).

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M6	Tuner	107004	FM (Complete) Less Tubes
M7	Tuning Cap.	108407	AM 3 Gang: Act. 10.7-301.5mmf, Osc. 12-129.8mmf
M8	Switch	108408	Function

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1785-S (6 Ft. Length) 1785-K (7½ Ft. Length)

AMP
PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE
V24	Left Ch. -Right Ch. AF Amp	6CG7
V25	Left Ch. -Right Ch. AF Amp	6CG7
V26	Left Ch. -Right Ch. AF Amp	6CG7
V27	Left Ch. Output	6BQ5
V28	Right Ch. Output	6BQ5
V29	Rectifier	5Y3GT

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C108A	▲35	400	105765	AFH3-131	C1020	FP367.5	TMT-130	TVL-3741	
B	▲35	400							
C	▲20	25							
C109A	▲20	400	106210	AFH4-57	D0890	FP430.97	TMQ-73	TVL-4667	
B	▲20	400							
C	▲20	25							
D	20	25							
C110	8	10NP	100509	PRS-AC6200	BBR8-150	TCN108		TVAN8-1112 *	①
C111	8	10NP	100509	PRS-AC6200	BBR8-150	TCN108		TVAN8-1112 *	①

① Some versions may use a 4mfd @ 10VNP in this application.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C112	.047 400V 10%		V84C4S47-10%		PM4S47	4DP-3-473		4TM-S47
C113	.022 200V 10%		V84C2S22-10%		PM4S22	4DP-2-223		2TM-S22
C114	.047 200V 10%		V84C2S47-10%		PM2S47	4DP-3-473		2TM-S47
C115	.047 400V 10%		V84C4S47-10%		PM4S47	4DP-3-473		4TM-S47
C116	.27 400V 10%		V84C4P25-10%		PM4P25	4DP-5-274		4TM-P25
C117	.047 400V 10%		V84C4S47-10%		PM4S47	4DP-3-473		4TM-S47
C118	.022 200V 10%		V84C2S22-10%		PM4S22	4DP-2-223		2TM-S22
C119	.047 200V 10%		V84C2S47-10%		PM2S47	4DP-3-473		2TM-S47
C120	.047 400V 10%		V84C4S47-10%		PM4S47	4DP-3-473		4TM-S47
C121	.27 400V 10%		V84C4P25-10%		PM6P25	4DP-5-274		4TM-P25

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R111A	500K *	1-2W	108470	BT-159				Loudness, Right Channel
B	500K *			STR-159				Loudness, Left Channel
C	Switch			KR-3				Power Off-On
R112A	1meg	1-2W	108469					Balance
B	500K							Bass, Right Channel
C	500K							Bass, Left Channel
R113A	500K	1-2W	108471	B-617	AD47-500K-S		FB55L	Treble, Right Channel
B	500K			SR-617	Not Req.		RU55L	Treble, Left Channel
C	Shaft			Not Req.	FS-3		CS3500	

* Taps @ 80K and 160K.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R114	2.7meg	
R115	120K	
R116	1500Ω	
R117	8200Ω	
R118	100K	
R119	220K	
R120	22K	
R121	8200Ω	
R122	120K	
R123	1500Ω	
R124	470K	

ITEM No.	RATING	REMARKS
R125	100K	
R126	3300Ω	
R127	47Ω 2W	
R128	470K	
R129	68Ω 2W	
R130	2.2meg	
R131	8200Ω	
R132	100K	
R133	2.7meg	
R134	120K	
R135	220K	

ITEM No.	RATING	REMARKS
R136	22K	
R137	8200Ω	
R138	120K	
R139	470K	
R140	100K	
R141	3300Ω	
R142	47Ω 2W	
R143	470K	
R144	1200Ω 2W	
R145	4700Ω	
R146	10K	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K11	Tone Comp.	470mmf, 1000mmf, 4700mmf, 10000mmf, 22K, 220K	106547	
K12	Tone Comp.	470mmf, 1000mmf, 4700mmf, 10000mmf, 22K, 220K	106547	

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T6	117V @ .86A	590VCT @ .120A	5V @ 2A	108489				P8177 ①		
	SEC. 3	SEC. 4	SEC. 5							
	6.3V @ 3.5A									

① Drill new mtg. holes. Tape Center Tap on 6.3V winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T7	7500Ω	6-8Ω CT	108472 ②	24S14	A-2902 ①	AU-609	A-3849 ①	24S14	S-57Z	
T8	7500Ω	6-8Ω CT	108472	22S88				22S88		

① Drill new mounting hole. ② Center Tap not used.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP1	12"	PM	8-10Ω	100897	12A10PA	
SP2	3½"	PM	4-6Ω	105395	3A15TZ4.9	
SP3	3½"	PM	4-6Ω	105395	3A15TZ4.9	
SP4	12"	PM	8-10Ω	100897	12A10PA	
SP5	3½"	PM	4-6Ω	105395	3A15TZ4.9	
SP6	3½"	PM	4-6Ω	105395	3A15TZ4.9	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								
	RCA Victor PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M9	106960A	13TBX		26DS				8TA4-SD	

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	RCA Victor PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M10	108215 †	W-103STSS † or W-103STDS † ♦	S-69X † or S-69XSD † ♦ or S-69XDD ♦	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M11	Switch		Function
M12	Switch	46760	Speaker Selector (DPDT Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Low-Loss Shielded Lead (Interconnecting) .....Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

VHF TUNER PARTS LIST AND DESCRIPTIONS

TUBES

• CBS • GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V201	RF Amp.	6ER5/GG

ITEM No.	USE	TYPE
V202	Mixer - Osc.	6CG8A

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C202	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C203	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204	27 N750		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C205	30							
C206	28			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C207	1000		EF-001	MFT-1000		CCF-102	CT280A	
C208	1.8-7							
C209	100							
C210	.5-3.5			829-3		CV-1	CT565	
C211	27		NPO-DI 25	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C212	33		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C213	30			TCZ-30				
C214	.5-3.5			829-3		VC-1	CT565	
C215	39 N750 5%			TCN-39	C10Q39U		CN7-439	10TCU-Q39
C216	18		NPO-DI 20	TCZ-18	C10Q18C	CCTO-180	CNO-418	10TCC-Q18
C217	7.25				C10V7C			
C218	1000		BPD-001	DD-102		CCF-102	CT280A	
C219	1000		EF-001	MFT-1000		CCF-102	CT280A	
C220	1000		EF-001	MFT-1000		CCF-102	CT280A	
C221	1000		EF-001	MFT-1000		CCF-102	CT280A	
C223	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C224	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C225	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C226	3		NPO-DI 3.0	DTZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R201	47K	
R202	1000Ω	
R203	47Ω	

ITEM No.	RATING	REMARKS
R204	2700Ω	
R205	220K	
R206	1000Ω	

ITEM No.	RATING	REMARKS
R207	4700Ω	
R208	4700Ω	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K201	VHF Antenna Isolation	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1
K202	VHF Antenna Isolation	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1
K203	UHF Antenna Isolation	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1
K204	UHF Antenna Isolation	470mmf, .3-1meg		Centralab RC-471 Sprague AC1-1

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
	Board	107920	Stator Board & Mounting Bracket Assembly
	Detent	107922	Channel Selector Detent, Complete
	Gear	107799	Fine Tuning Shaft Drive Gear

ALIGNMENT INSTRUCTIONS (cont)

4.5MC TRAP ALIGNMENT

Set Contrast fully clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	.01mfd	High side to point (B). Low side to chassis.	4.5MC (400∿ Mod)	Any non-interfering channel	Vert. Amp. thru demodulator probe to cathode of picture tube. Low side to chassis.	All	Adjust for MINIMUM 400∿ indication on scope.

FIG. 1

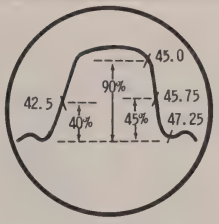


FIG. 2

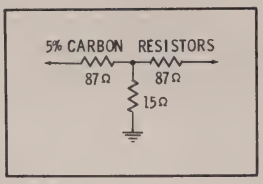


FIG. 3

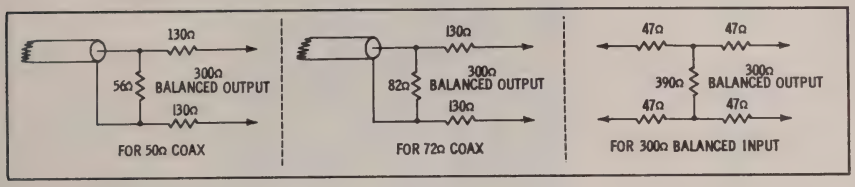


FIG. 4

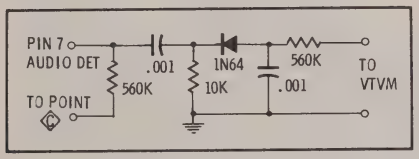
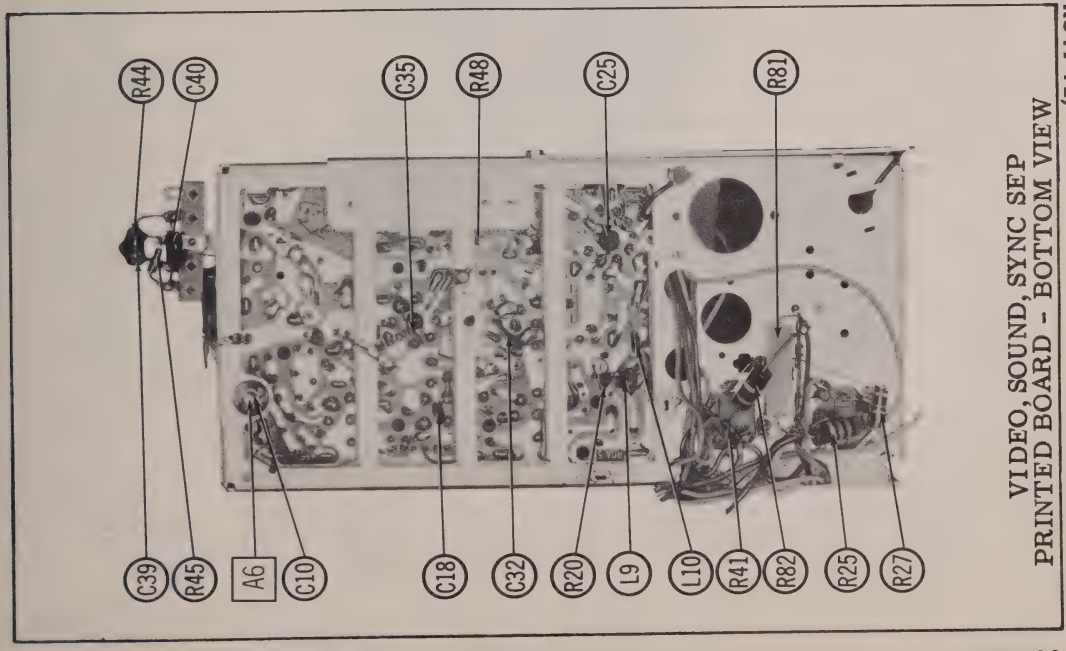
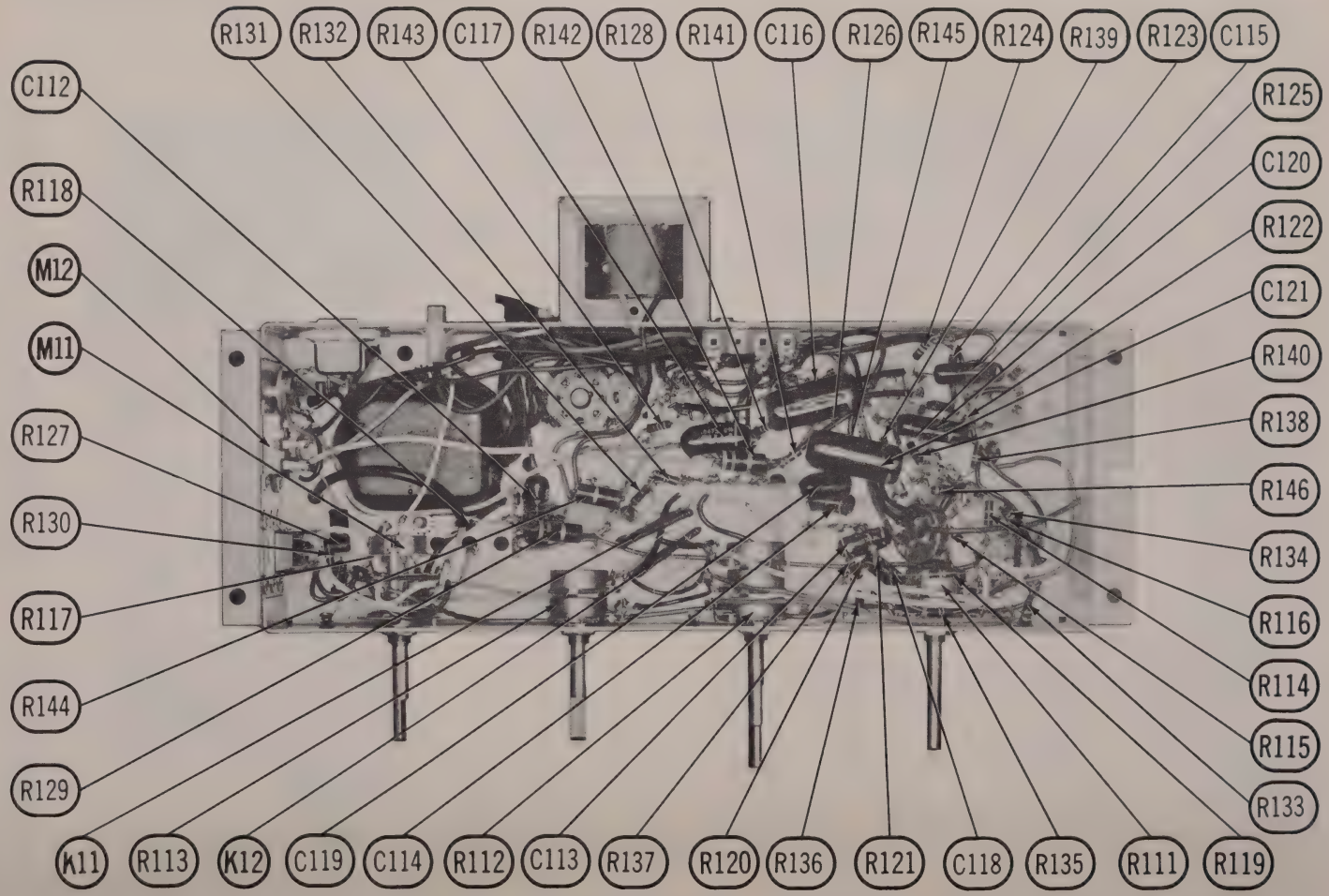


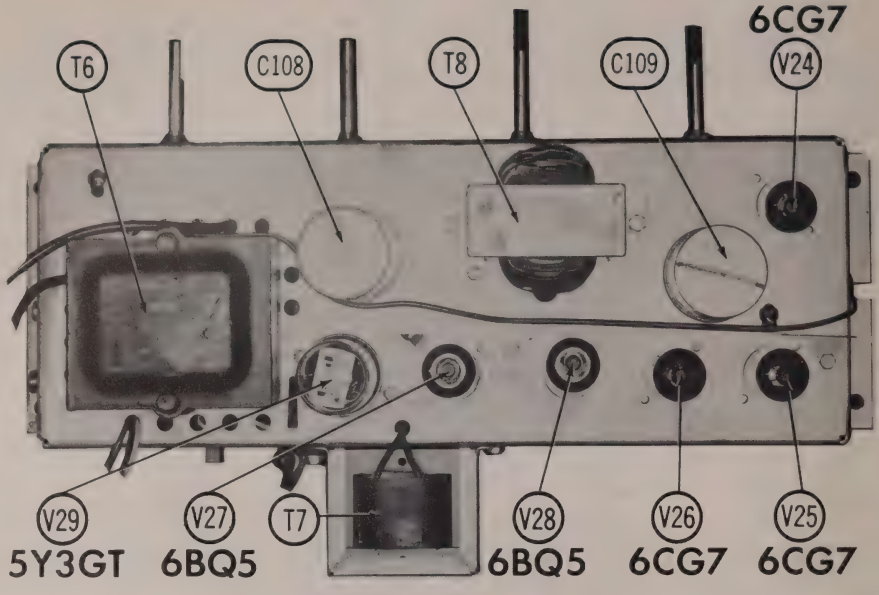
FIG. 5



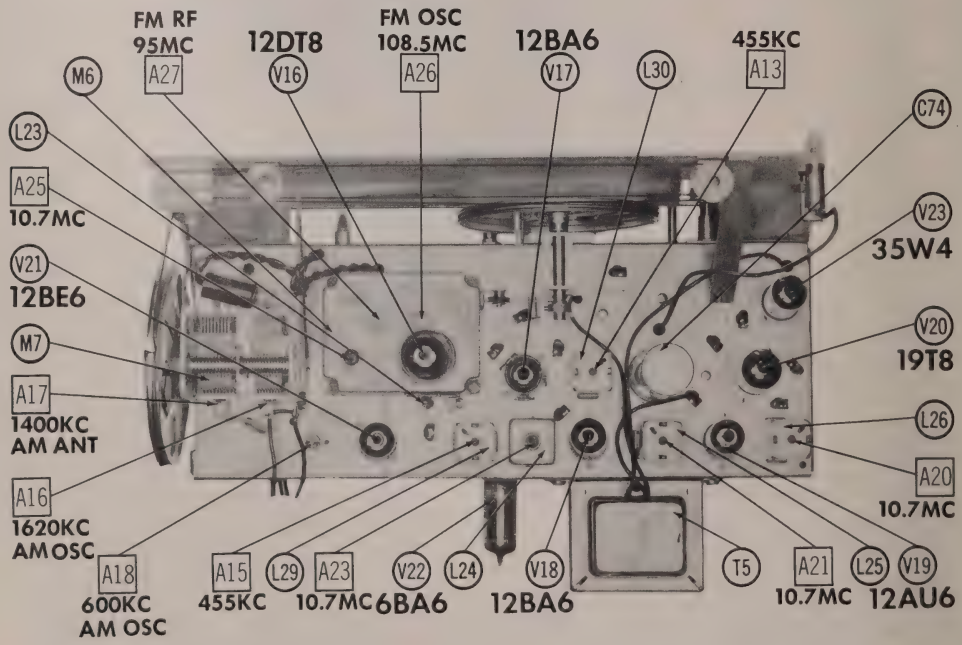
VIDEO, SOUND, SYNC SEP
PRINTED BOARD - BOTTOM VIEW



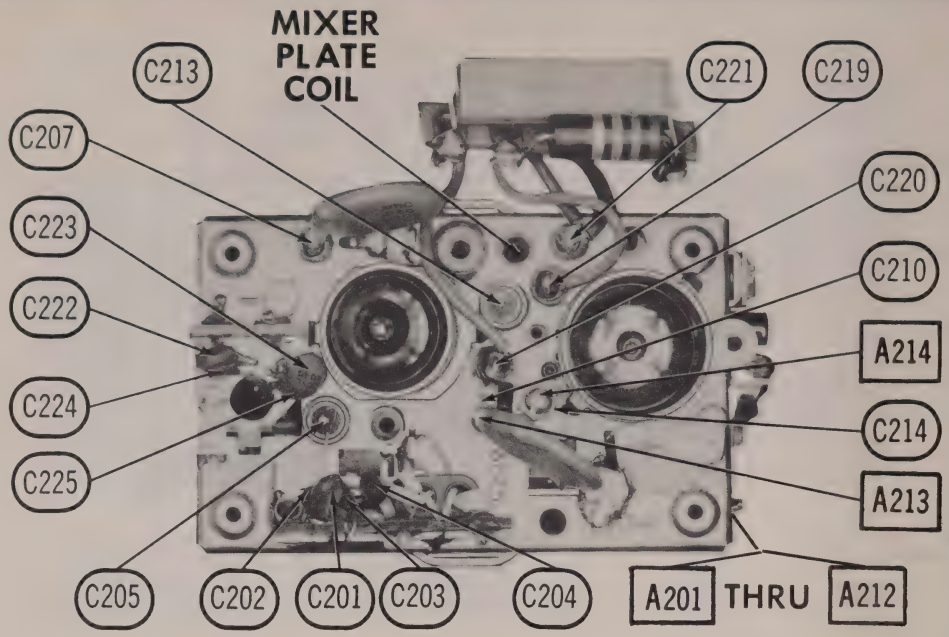
AMPLIFIER CHASSIS - BOTTOM VIEW



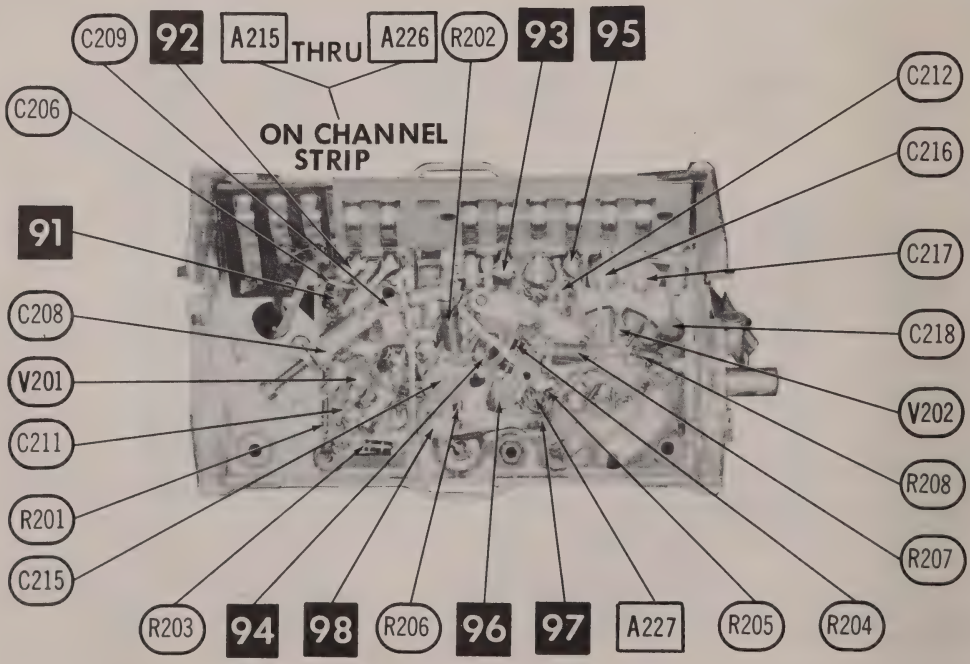
AMPLIFIER CHASSIS - TOP VIEW



FM-AM TUNER CHASSIS - TOP VIEW



VHF TUNER With UHF Provisions KRK87F - TOP VIEW



A Howard W. Sams CIRCUITRACE® Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VHF TUNER With UHF Provisions KRK87F - BOTTOM VIEW

TUNER ALIGNMENT INSTRUCTIONS
VHF-UHF

UHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Across UHF antenna terminals.	Fundamental Osc. Freq. (See Chart #1)	Channel to be received	Across Video Det. load with 10K in high side.	UHF Osc. slug	Adjust for zero beat on scope.

UHF ANTENNA, MIXER AND HARMONIC OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Across UHF antenna terminals.	To Center Freq. of channel to be received. (10MC Swp.) (See chart #2)		Channel to be received	Across Video Det. load thru 10K.	A228, A229, A230	Adjust for maximum gain and symmetry of response.

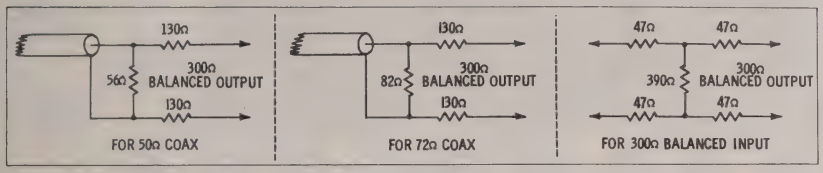


FIG. 201

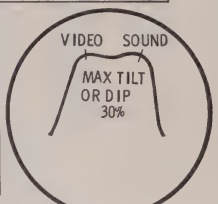


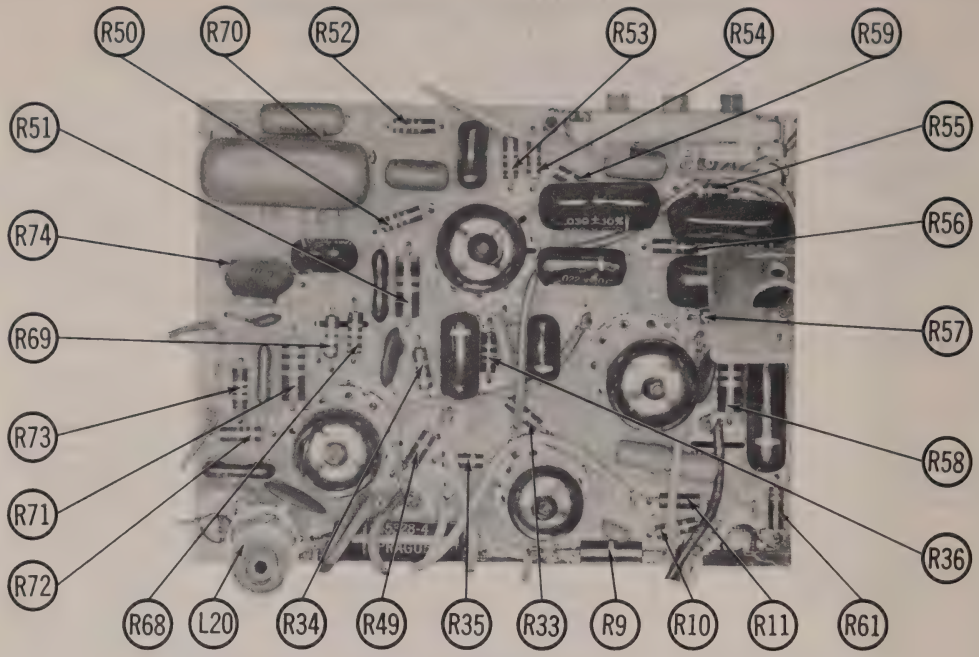
FIG. 202

CHART #1

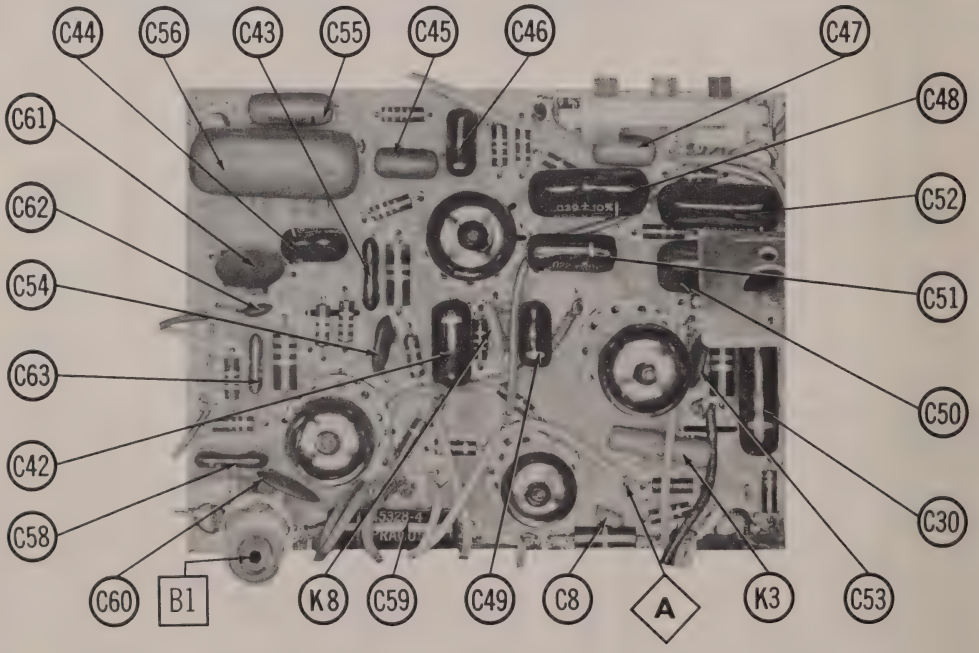
CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)	CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)	CHANNEL NUMBER	FUNDAMENTAL OSC. FREQ. (MC)	HARMONIC OSC. FREQ. (MC)
14	258.5	517	38	220.33	661	62	268.33	805
15	261.5	523	39	222.33	667	63	270.33	811
16	264.5	529	40	224.33	673	64	272.33	817
17	267.5	535	41	226.33	679	65	274.33	823
18	270.5	541	42	228.33	685	66	276.33	829
19	182.33	547	43	172.75	691	67	278.33	835
20	184.33	553	44	232.33	697	68	280.33	841
21	186.33	559	45	234.33	703	69	282.33	847
22	188.33	565	46	236.33	709	70	213.25	853
23	190.33	571	47	238.33	715	71	214.75	859
24	192.33	577	48	240.33	721	72	216.25	865
25	194.33	583	49	242.33	727	73	217.75	871
26	196.33	589	50	244.33	733	74	219.25	877
27	198.33	595	51	246.33	739	75	220.75	883
28	200.33	601	52	248.33	745	76	222.25	889
29	202.33	607	53	250.33	751	77	223.75	895
30	204.33	613	54	252.33	757	78	225.25	901
31	206.33	619	55	254.33	763	79	226.75	907
32	208.33	625	56	256.33	769	80	228.25	913
33	210.33	631	57	258.33	775	81	229.75	919
34	212.33	637	58	260.33	781	82	231.25	925
35	214.33	643	59	262.33	787	83	232.75	931
36	216.33	649	60	264.33	793			
37	218.33	655	61	266.33	799			

CHART #2

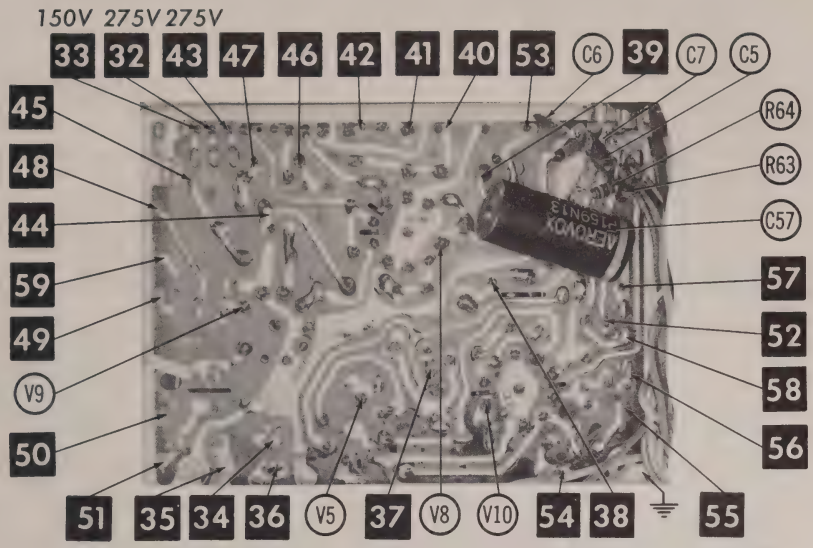
Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier
2	54-60	55.25	59.75	23	524-530	525.25	529.75	44	650-656	651.25	655.75	64	770-776	771.25	775.75
3	60-66	61.25	65.75	24	530-536	531.25	535.75	45	656-662	657.25	661.75	65	776-782	777.25	781.75
4	66-72	67.25	71.75	25	536-542	537.25	541.75	46	662-668	663.25	667.75	66	782-788	783.25	787.75
5	76-82	77.25	81.75	26	542-548	543.25	547.75	47	668-674	669.25	673.75	67	788-794	789.25	793.75
6	82-88	83.25	87.75	27	548-554	549.25	553.75	48	674-680	675.25	679.75	68	794-800	795.25	799.75
7	174-180	175.25	179.75	28	554-560	555.25	559.75	49	680-686	681.25	685.75	69	800-806	801.25	805.75
8	180-186	181.25	185.75	29	560-566	561.25	565.75	50	686-692	687.25	691.75	70	806-812	807.25	811.75
9	186-192	187.25	191.75	30	566-572	567.25	571.75	51	692-698	693.25	697.75	71	812-818	813.25	817.75
10	192-198	193.25	197.75	31	572-578	573.25	577.75	52	698-704	699.25	703.75	72	818-824	819.25	823.75
11	198-204	199.25	203.75	32	578-584	579.25	583.75	53	704-710	705.25	709.75	73	824-830	825.25	829.75
12	204-210	205.25	209.75	33	584-590	585.25	598.75	54	710-716	711.25	715.75	74	830-836	831.25	835.75
13	210-216	211.25	215.75	34	590-596	591.25	595.75	55	716-722	717.25	721.75	75	836-842	837.25	841.75
14	470-476	471.25	475.75	35	596-602	597.25	601.75	56	722-728	723.25	727.75	76	842-848	843.25	847.75
15	476-482	477.25	481.75	36	602-608	603.25	607.75	57	728-734	729.25	733.75	77	848-854	849.25	853.75
16	482-488	483.25	487.75	37	608-614	609.25	613.75	58	734-740	735.25	739.75	78	854-860	855.25	859.75
17	488-494	489.25	493.75	38	614-620	615.25	619.75	59	740-746	741.25	745.75	79	860-866	861.25	865.75
18	494-500	495.25	499.75	39	620-626	621.25	625.75	60	746-752	747.25	751.75	80	866-872	867.25	871.75
19	500-506	501.25	505.75	40	626-632	627.25	631.75	61	752-758	753.25	757.75	81	872-878	873.25	877.75
20	506-512	507.25	511.75	41	632-638	633.25	637.75	62	758-764	759.25	763.75	82	878-884	879.25	883.75
21	512-518	513.25	517.75	42	638-644	639.25	643.75	63	764-770	765.25	769.75	83	884-890	885.25	889.75
22	518-524	519.25	523.75	43	644-650	645.25	649.75								



AGC, SYNC AMP., VERT & HORIZ. OSC. PRINTED BOARD
RESISTOR & INDUCTOR IDENT.



AGC, SYNC AMP., VERT & HORIZ. OSC. PRINTED BOARD
CAPACITOR & MISC. IDENT.



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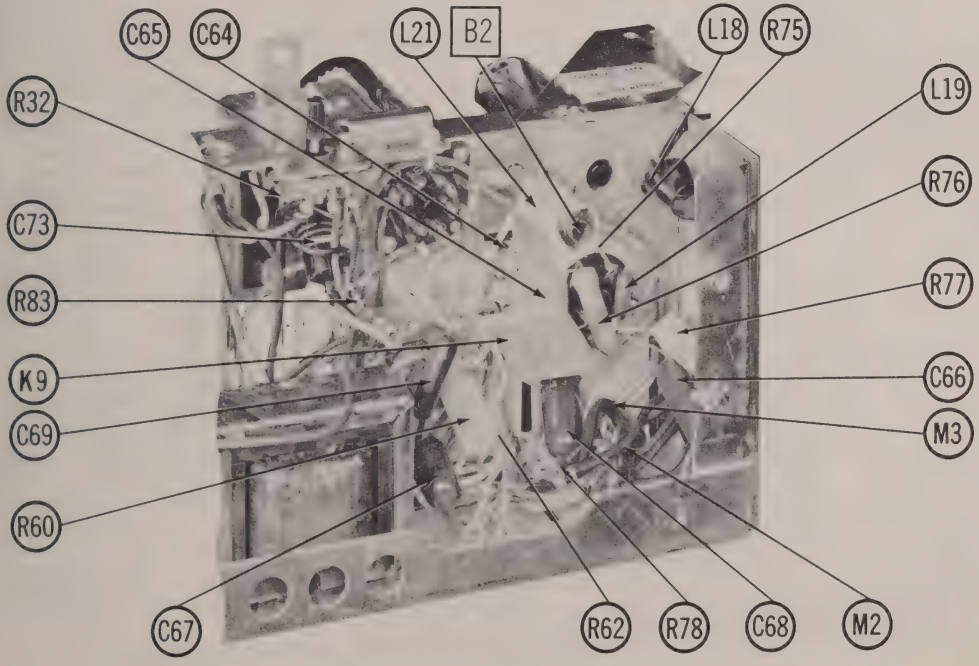
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

AGC, SYNC AMP., VERT & HORIZ. OSC. PRINTED BOARD
RESISTOR, CAPACITOR, TUBE IDENT.

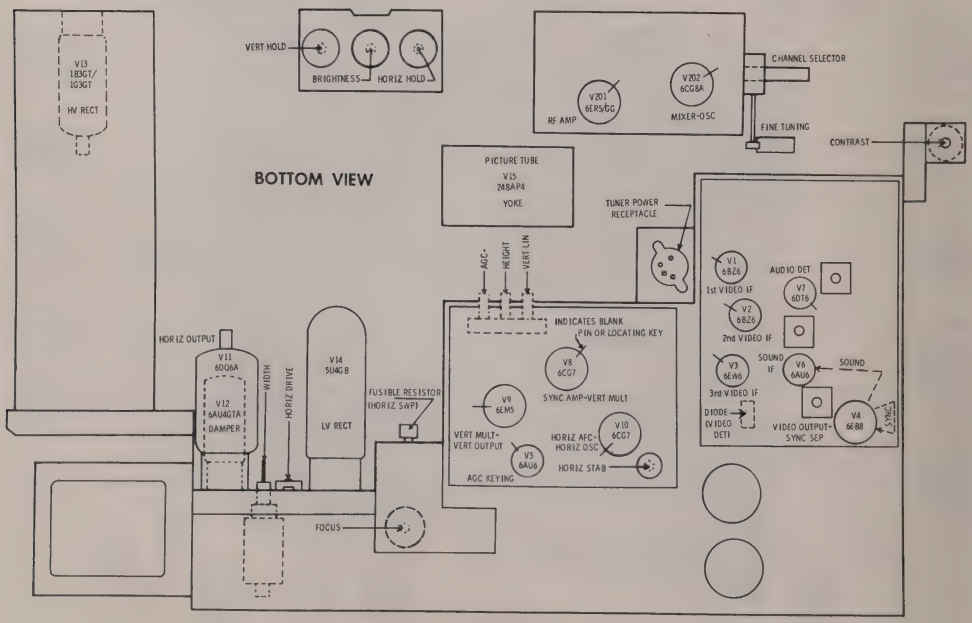


L V SUPPLY & HORIZ SWEEP SECTION - BOTTOM VIEW

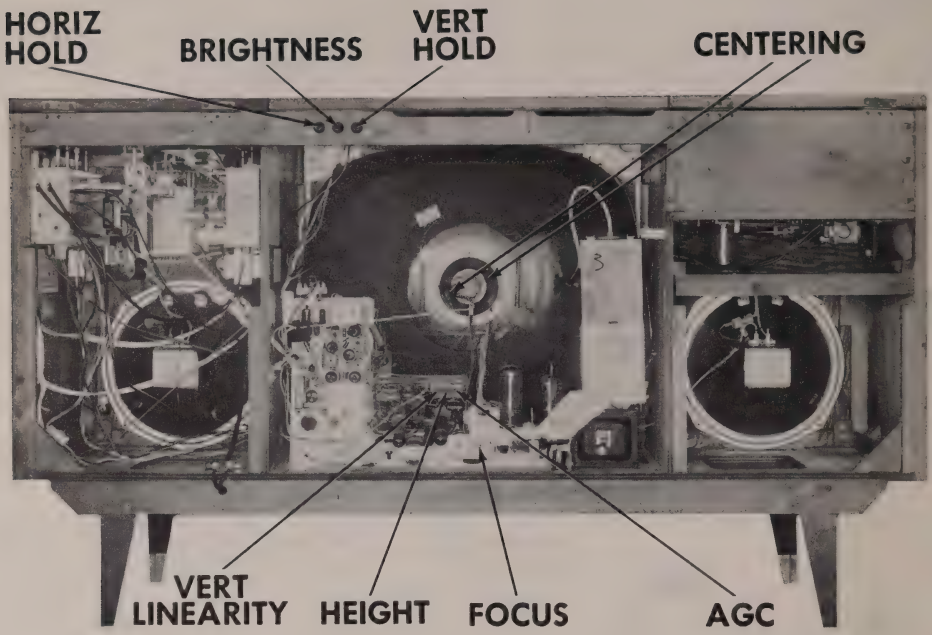
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	120K	1200Ω	0Ω	.1Ω	▲220Ω	▲220Ω	0Ω		
V2	6BZ6	80K	▲33Ω	0Ω	.1Ω	†220Ω	†220Ω	95K		
V3	6EW6	.1Ω	125Ω	.1Ω	0Ω	†3200Ω	†3200Ω	0Ω		
V4	6EB8	0Ω	4.9meg	†2.2meg	.1Ω	0Ω	47Ω	4200Ω	†18K	†8600Ω
V5	6AU6	†30K	†7800Ω	.1Ω	0Ω	520K	†0Ω	†7800Ω		
V6	6AU6	47K	0Ω	.1Ω	0Ω	†6700Ω	†6700Ω	82Ω		
V7	6DT6	4.2Ω	560Ω	0Ω	.1Ω	†230K	†9200Ω	470K		
V8	6CG7	†18K	†565K	0Ω	0Ω	.1Ω	†•3meg	• 2meg	0Ω	0Ω
V9	6EM5	†220Ω	0Ω	• 1.5meg	.1Ω	0Ω	• 1.5meg	0Ω	NC	†635Ω
V10	6CG7	†0Ω	• 670K	• 520K	0Ω	.1Ω	†68K	• 70K	68Ω	0Ω
V11	6DQ6A	TP	0Ω	NC	†6800Ω	1meg	NC	.1Ω	100Ω	TOP CAP †12Ω
V12	6AU4GTA	NC	NC	¶4.8meg	NC	†2Ω	NC	.1Ω	0Ω	
V13	1B3GT 1G3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡560Ω
V14	5U4GB	NC	¶	NC	20Ω	NC	22Ω	NC	¶	
V15	24BAP4	0Ω	22K	60K	†•800K	NC	NC	• 150K	.1Ω	
V201	6ER5/GG	47Ω	2.3meg	0Ω	.1Ω	†5700Ω	0Ω	47Ω		
V202	6CG8A	4700Ω	†23K	0Ω	0Ω	.1Ω	†5700Ω	†18K	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM PIN 8 OF V14.
‡ MEASURED FROM PIN 3 OF V12.
NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Before adjusting the Stabilizing slug (B1), the Horizontal Drive and Width must be properly adjusted.

Set the Horizontal Hold Control to the pull-in point. Turn the Width slug (B2) fully counterclockwise and turn the Horizontal Drive Trimmer (B3) counterclockwise until a bright vertical line appears near the center of the raster, then turn clockwise until the line just disappears. If no line appears, leave B3 fully counterclockwise. With the Brightness Control set to normal level, adjust the Width slug B2 for an overscan of approximately 3/4 inch on each side of the screen at normal line voltage.

Connect a short jumper across the terminals of the Horizontal Stabilizing Coil (L20) and short the grid (pin 2) of the 6CG7 (V10) to chassis with a small screwdriver. Adjust the Horizontal Hold control for an upright picture (may appear to float back and forth across the screen). Remove the jumper from across L20 and adjust B1 to again obtain a picture in an upright position. When B1 is properly adjusted, alternately shorting and removing short should not cause the picture to lose sync but instead cause a slight sideways shift of the picture. Remove the short from the grid of the 6CG7.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 240-KV-775SU

1. Remove 20 wood screws holding rear cover. Remove rear cover.
2. Remove picture tube socket, yoke plug, hi voltage lead, 3 push-on type knobs, and speaker plug.
3. Remove 5 chassis bolts under cabinet and one screw holding hi voltage cage.
4. Remove contrast control held by 2 screws.
5. Remove chassis.

PICTURE TUBE REMOVAL

1. Remove chassis.
2. Remove spring holding wire from tube mounting.
3. Remove 2 bolts holding picture tube mounting at top of cabinet.
4. Pull picture tube straight out.

PHOTOFACT® Folder

**TRUETONE MODELS
2DC3000, 2DC3001**

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

TRUETONE MODELS
2DC3000, 2DC3001

MODEL 2DC3000

TRUETONE MODELS
2DC3000, 2DC3001

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PHOTOFACT® Folder

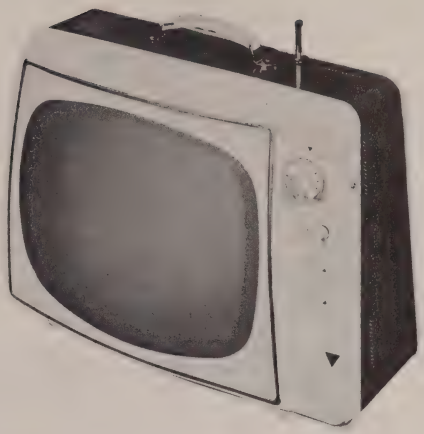
TRUETONE MODELS 2DC3000, 2DC3001

TRUETONE MODELS 2DC3000, 2DC3001

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 5 push-on type knobs from the front of cabinet.
2. Remove 6 metal screws holding rear cover. Remove antenna connections. Remove rear cover.
3. Remove 5 metal screws holding front glass. Remove the front glass.
4. Remove 3 metal screws holding front control bracket to picture tube mounting strip.
5. Remove speaker leads, picture tube socket, yoke plug, antenna lead and HV lead.
6. Remove 4 chassis bolts from bottom of cabinet and one one each side of chassis.
7. Remove chassis.



MODEL 2DC3000

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRUETONE MODELS 2DC3000, 2DC3001

TRADE NAME	Truetone Models 2DC3000, 2DC3001
SUPPLIER	Western Auto Supply Co., 2107 Grande Avenue, Kansas City, Mo.
TYPE SET	Portable Television Receiver
TUBES	VHF - Sixteen, UHF - Seventeen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 140 Watts, 1.45 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 5 push-on type knobs from the front. Remove 5 screws holding trim. Tilt glass out and remove.

FUSE DEVICE

A 5.5Ω fusible resistor is used for low voltage power supply protection. (For location, see R93 in photo "Upper Chassis- Top View".)

TUNER OSCILLATOR ADJUSTMENTS

To touch-up VHF Oscillator, remove plug in side of cabinet.

AGC

The AGC may be varied by means of an AGC control. (For location, see "Tube Placement Chart".)

FOCUS

No provision is made to vary the focus on this receiver.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

The Horizontal Frequency slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

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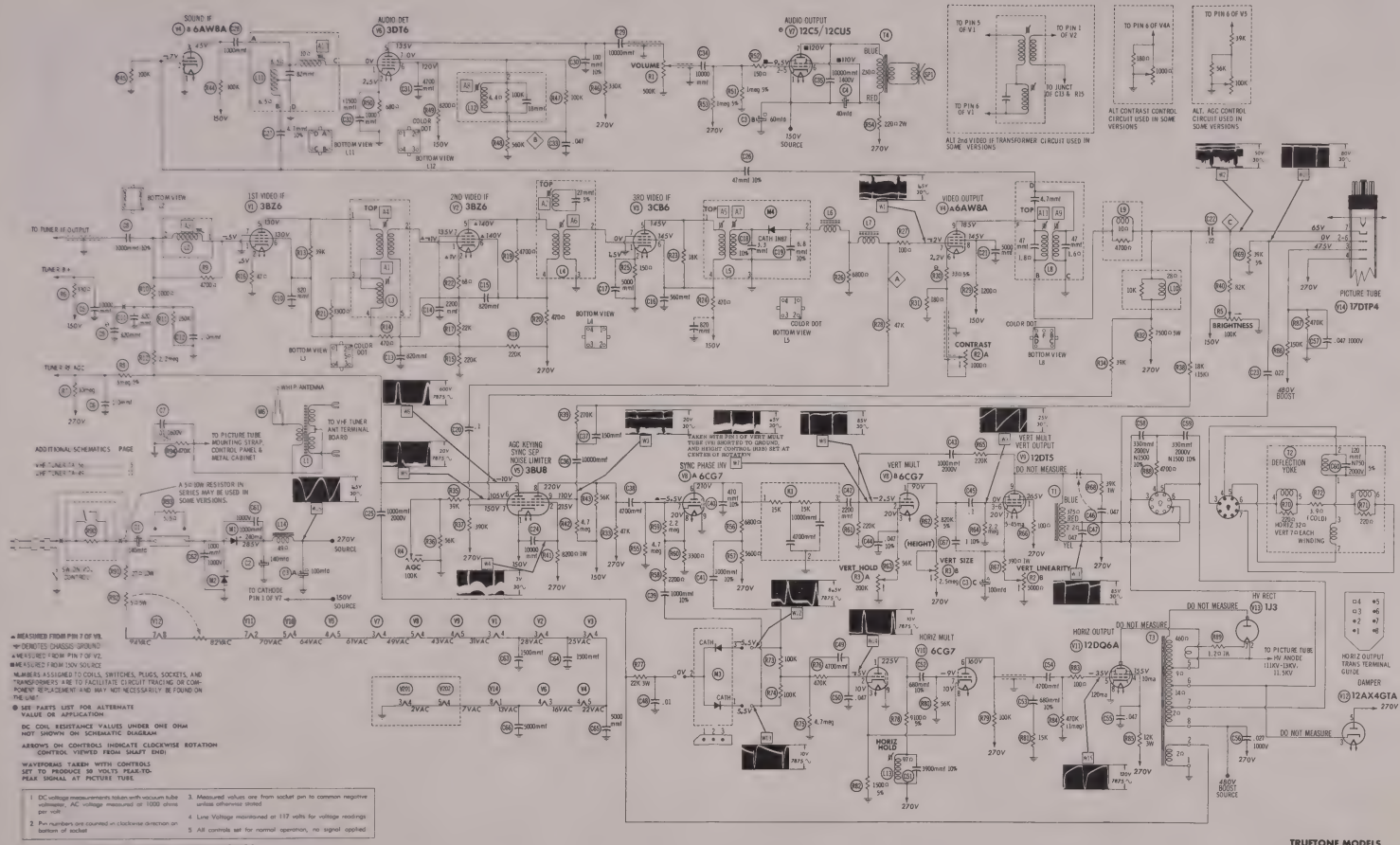
SET 489 FOLDER 2



- MEASURED FROM PIN 7 OF V8.
- DENOTES CHASSIS GROUND.
- MEASURED FROM PIN 7 OF V2.
- MEASURED FROM 150V SOURCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END.

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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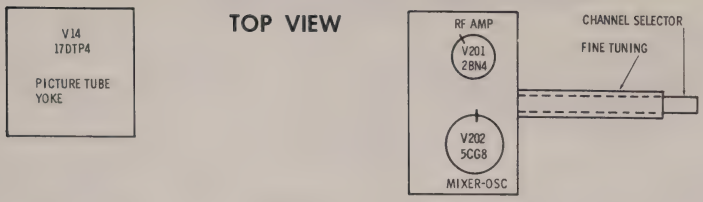
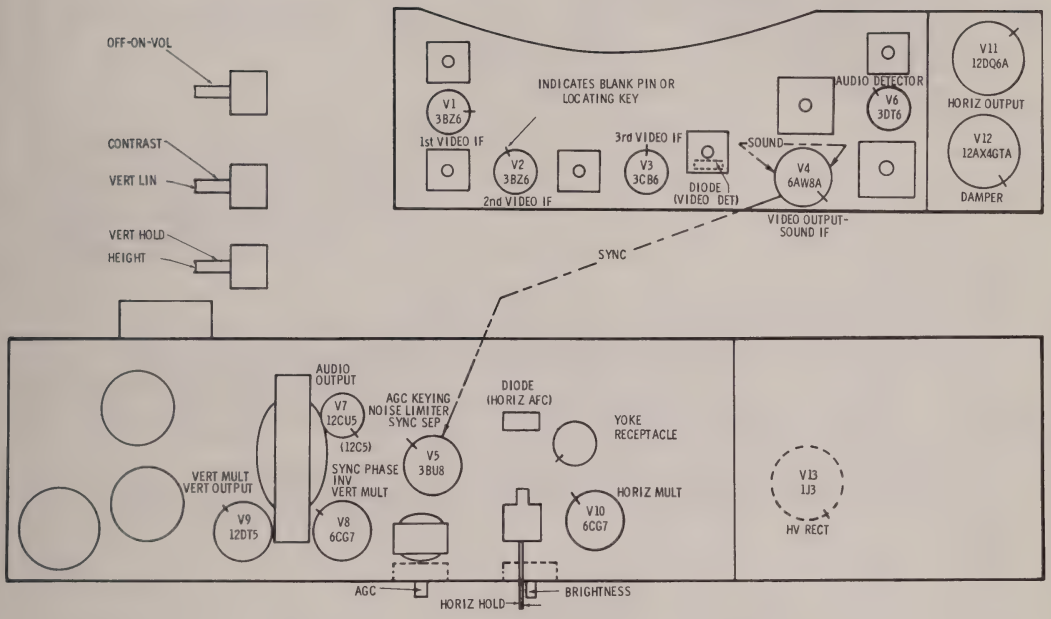
TRUETONE MODELS 2DC3000, 2DC3001

TUBE PLACEMENT CHART

TOP VIEW





TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

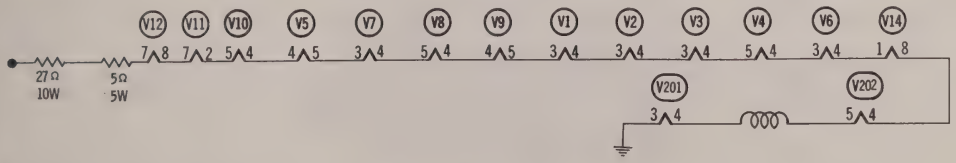
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor, Rect. (B+)

SWEEP FAILURE
No raster, has sound V10, V11, V12, V13, V14
No vertical deflection V8, V9
Poor vert. linearity or foldover V8, V9
Poor horiz. linearity or foldover V10, V11, V12
Narrow picture V10, V11, V12, Rect. (B+)
Vert. off freq. V8, V9
Horiz. off freq. V8, Diode (Horiz. AFC), V10

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V14
Has pic, no sound V4, V6, V7
Overloaded picture V5

SYNC FAILURE
No vert. sync V5, V8
No horiz. sync V5, V8
No vert. or horiz. sync V5, V8

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



TRUETONE MODELS 2DC3000, 2DC3001

FOLDER 2

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8282, 8606, 8606L, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Set Contrast fully clockwise.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44MC (10MC Swp)	41.25MC	Any non-interfering channel	Vert. Amp. thru 47K to point (A). Low side to chassis. (Across Video Det. load)	A1	Adjust to place marker in 41.25MC trap notch. (See Fig. 1).
2.	"	"	"	47.25MC	"	"	A2	Adjust to place marker in other trap notch.
3.	"	"	"	42.75MC 45.75MC	"	"	Mixer Plate Coil & A3 thru A7	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Adjust Mixer Plate Coil and A3 for maximum gain. A4 and A5 to shape high frequency side of response curve. A6 and A7 is adjusted to shape low frequency side.

SOUND IF ALIGNMENT

Connect an output meter across speaker voice coil.
Connect the DC probe of the VTVM to point (B). Common to chassis. Tune in a strong air signal and adjust A8 for maximum output. If two peaks occur during this adjustment, use the one resulting in the highest reading on the VTVM.
Reduce the signal strength by disconnecting the antenna. Adjust A9 and A10 for maximum undistorted sound. Further reduce the signal by moving the antenna lead further away. Retouch A9 and A10 for maximum undistorted sound. Repeat entire procedure if necessary.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.05mfd	High side to point (A). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	AC probe to point (C). Common to chassis. (Use 0-10VAC scale).	A11	Adjust for MINIMUM deflection.

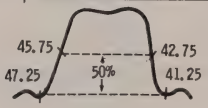
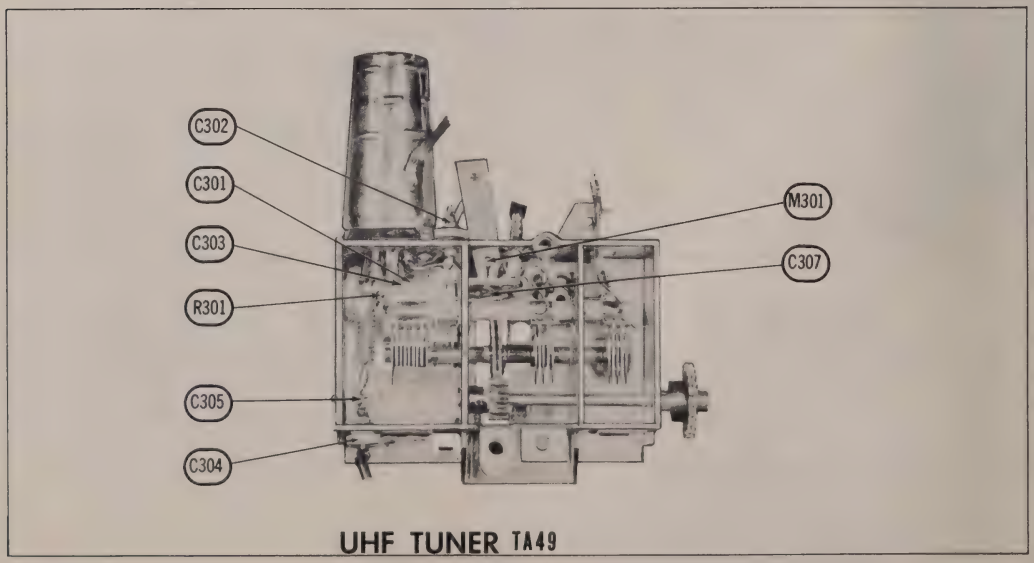
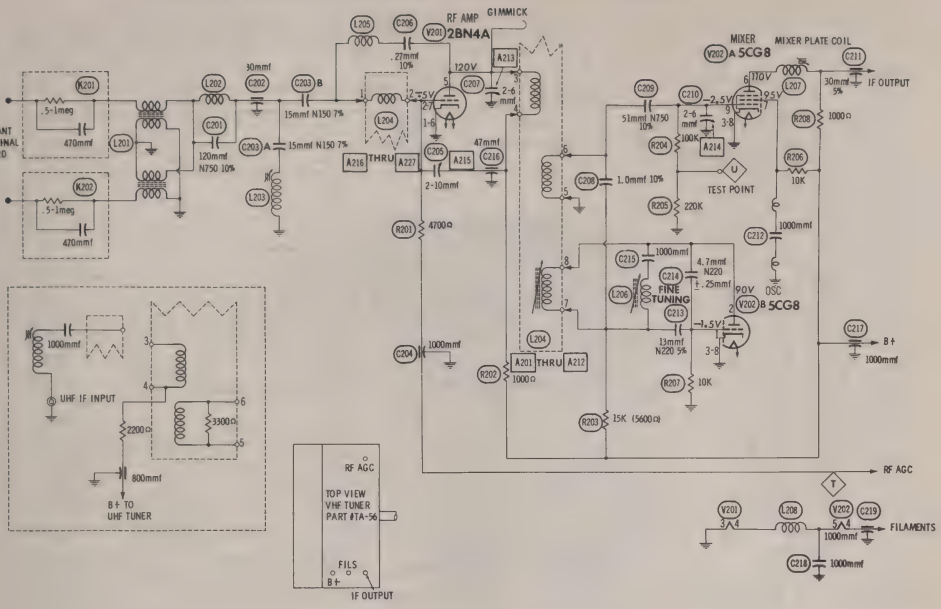


FIG. 1



UHF TUNER TA49



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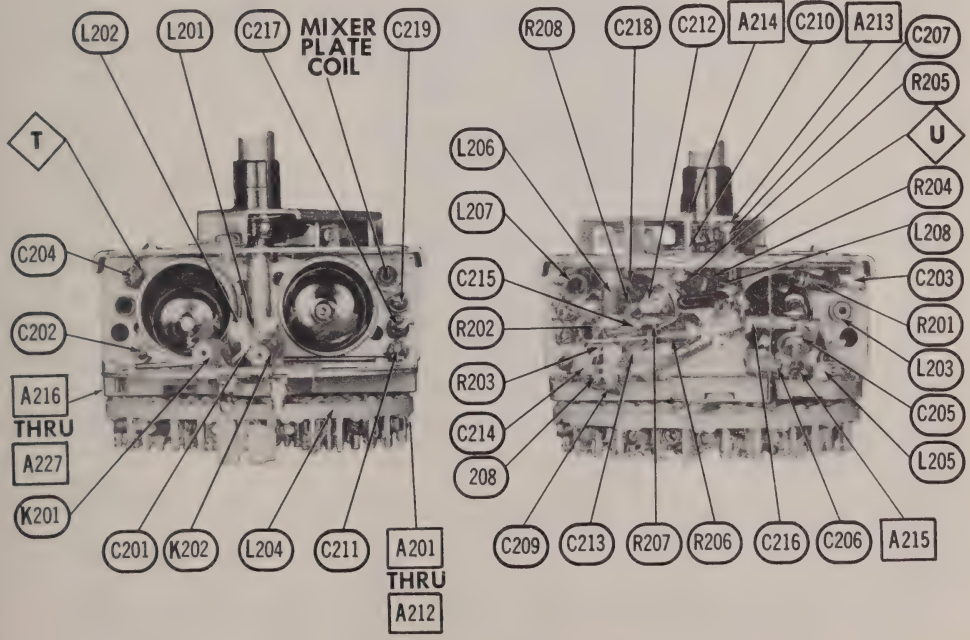
VHF TUNER TA-56



VHF TUNER TA-56

SET 489 FOLDER 2

TUNER PARTS LIST AND DESCRIPTIONS

TA-56

TUBES

• CBS • GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amplifier	2BN4A	V202	Mixer-Osc.	5CG8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	120 N750 10%			TCZ-120	C10T12U	CCTN-121	CN7-312	10TCU-T12
C202	30	#13M350U300N-02						
C203A	15 N150 7%	#13L8PG150N2				* *		10TCP-Q15
B	15 N150 7%					* *		10TCP-Q15
C204	1000		EF-001	MFT-1000		CCF-102	CT280A	
C205	2-10	#31B-902-09		829-10				
C206	.27 10%	#13D-111-45						
C207	2-6			829-6		VC-3	CT552	
C208	1.0 10%		NPO-SI 1.0	TCZ-1			CNO-510	10TCC-V10
C209	51 N750 10%	(31MMF-N470)*		TCN-51		CCTN-470		
C210	2-6			829-6		VC-3	CT522	
C211	30 5%	#13M350U300J-01						
C212	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C213	13 N220 5%	#13L8R130J				* *		10TCR-Q12
C214	4.7 N220 ±.25mmf	#13L8R4R7C				* *		10TCR-V47
C215	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C216	47	#13M130U470J01		MFT-50				
C217	1000		EF-001	MFT-1000		CCF-102	CT280A	
C218	1000		BPD-001	DD-001	BYA10D1	CCD-102	B-210	5HK-D10
C219	1000		EF-001	MFT-1000		CCF-102	CT280A	

"Standard Coil" Part Number.
* Alternate Value
** Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R201	4700Ω	
R202	1000Ω	
R203	15K	(5600Ω) *

ITEM No.	RATING	REMARKS
R204	100K	
R205	220K	
R206	10K	

ITEM No.	RATING	REMARKS
R207	10K	
R208	1000Ω	

* Alternate Value

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA
K201	Antenna Filter	470mmf, .5-1meg	13P-195	Centralab RC-471 Sprague AC1-1
K202	Antenna Filter	470mmf, .5-1meg	13P-195	Centralab RC-471 Sprague AC1-1

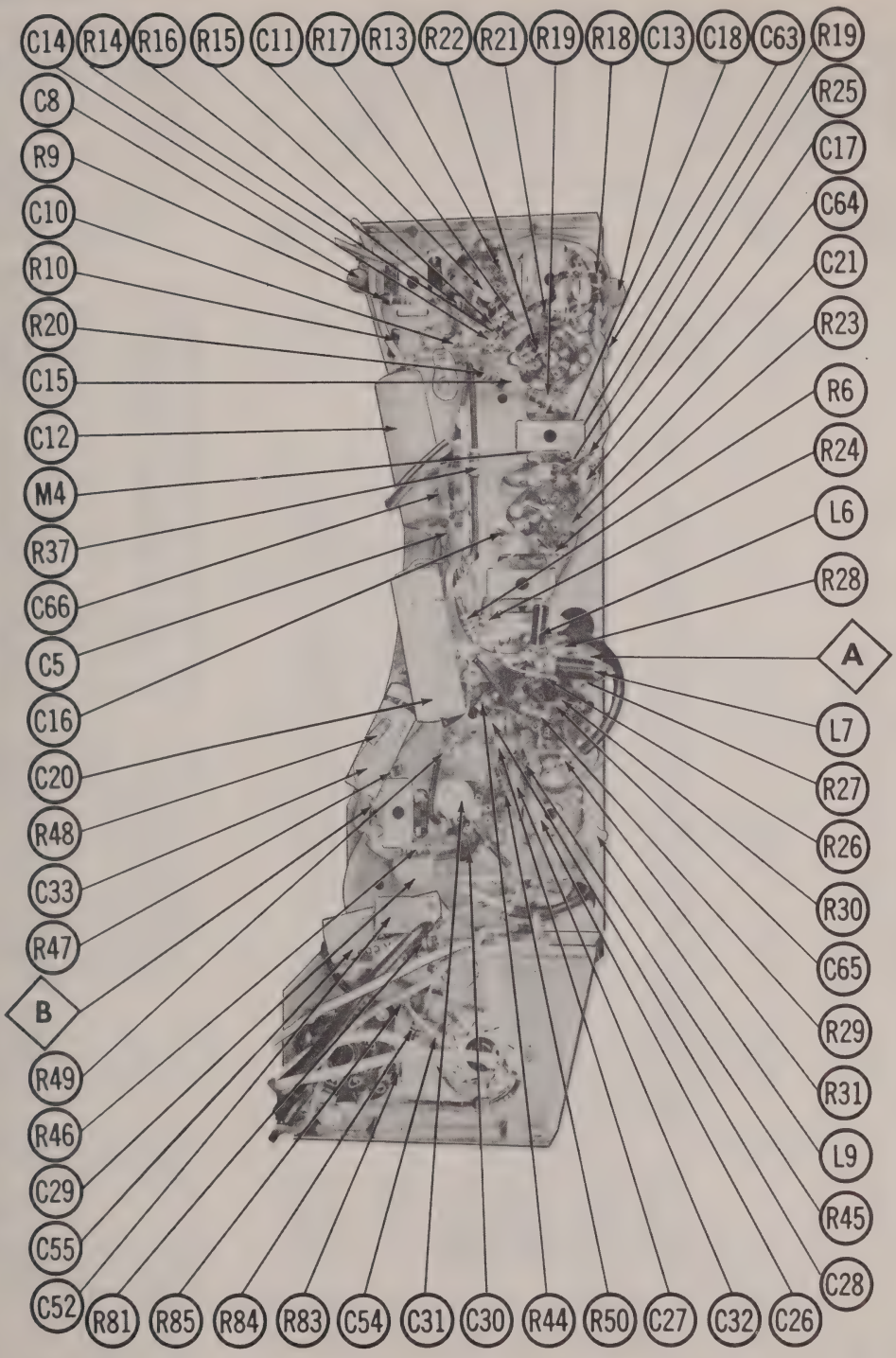
Note : Part numbers listed ablve are "Standard Coil" Part numbers.

COILS (RF-IF)

ITEM No.	USE	PART No.	NOTES
L201	Ant. Trans.	31T-3397	
L202	RF Choke	34A-748	
L203	IF Trap Coil	34A-762	
L204	Ant., RF, Mixer Grid & Osc. Coils	31T-3454-034-000	Channel 2-13 Includes Rotor & Coil Assy.

ITEM No.	USE	PART No.	NOTES
L205	RF Choke	34A-1005	
L206	Fine Tuning Coil	34A-787-03	
L207	Mixer Plate Coil	31UA-580-017	
L208	Fil. Choke	31K-137-027	

Note: Part numbers listed above are "Standard Coil" Part numbers.



UPPER CHASSIS-BOTTOM VIEW

SET 489 FOLDER 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	CBS / GENERAL ELECTRIC / RAYTHEON / SYLVANIA — USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	3BZ6	V7	Audio Output	12CU5/12C5
V2	2nd Video IF Amp.	3BZ6	V8	Sync Phase Inv -Vert. Multi	6CG7
V3	3rd Video IF Amp.	3CB6	V9	Vert Multi. -Vert. Output	12DT5
V4	Video Output- Sound IF Amp.	6AW8A	V10	Horiz. Multi	6CG7
V5	AGC Keying-Sync Sep.- Noise Limiter	3BU8	V11	Horiz. Output	12DQ6A
V6	Audio Detector	3DT6	V12	Damper	12AX4GTA
			V13	HV Rect.	1Z3

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: TRUETONE PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V14	17DTP4			17DTP4 †		† "Silver Screen 85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	160	300	EC-64	AFH3T-3T-25X3266	FP131	TMS-34	TMS-34	TVL-1540	
C2	160	300	EC-119	AFH3B-3T-25X3035	FP131	TMS-43	TMS-43	TVL-1544	
C3A	.100	300	EC-120	AFH3S4-100-20 D0044	FP424.3	TMQ-159	TMQ-159	TVL-4711	
B	.e60	200		BR1005					
C	.100	50							
C4	40	200	EC-113	PRS3580 †	BR4025	TC38	TD-40-350	TVA-1511	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	10000		BPD-51	DD-103	BTA10S	CCD-103	B-110	5HK-S10
C6	1.0 100V		P388N-1.0		CUB3W1		GEM-2	3TM-M1
C7	.01 1800V	.05mfd*	P184MC3M-01	DD8-103	CUB1S8	16DP-3-103	GEM-1611	MB-3S
C8	1000 10%		DK-1000	DD-103	1B3Z8	CCD-103	GP310	10TS-D10
C9	820	Note 1	DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C10	820		DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C11	820		DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C12	1.0 100V		P388N-1.0		CUB3W1		GEM-21	3TM-M1
C13	820		DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C14	820		DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C15	820		DI-820	DD-S21	BTA10T83	CCD-821	B-382	5GA-T82
C16	2200		BPD-005	DD-S03	BTA10D5	CCD-S03	B-350	5HK-D50
C17	8.3 10%		NPO-8.3 3	TCZ-S3R3	C10Y3S	CCTO-3R3	CNO-353	10TCC-Y33
C18	8.8 10%		NPO-Cd 8.8	DTZ-S8R8	C10Y8SC	CCTO-8R8	CNO-868	10TCC-V88
C20	.01 800V		P488N-1	DF-104	CUB4P1	6DP-4-104	GEM-601	6TM-P1
C21	5000		BPD-005	DD-S03	BTA10D5	CCD-S03	B-350	5HK-D50
C22	22 400V		C548P22		CUB4P22	4DP-5-224	GEM-4022	4TM-M22
C23	.022 600V		P488N-022	DD-203	CUB4S3	8DP-3-223	GEM-6122	6TM-S22
C24	10000		BPD-01	DD-103	BTA10S8	CCD-103	B-110	5HK-S10
C25	1000 2000V		HVD-30-1000	DD80-102	HVB20X	VCM-35-102	2HV-310	BL-D10
C26	47 10%		NPO-Cd 47		LL04T	CCD-470	GP447	10TS-Q47
C27	4.7 10%		NPO-Cd 4.7	TCZ-4R7	C10Y4TC	CCTO-4R7	CNO-547	10TCC-V47
C28	1000		BPD-051	DD-103	BTA10D1	CCD-103	B-310	5HK-D10
C29	10000		BPD-01	DD-103	BTA10S8	CCD-103	B-110	5HK-S10
C30	100 10%		DK-100	DD-101	LL07T	CCD-101	GP-310	10TS-T10
C32	4700		BPD-0047	DD-473	BTA10D47M	CCD-473	B-347	5HK-D47
C33	1000	(1500mmf)*	BPD-051	DD-103	BTA10D1	CCD-103	B-310	5HK-D10
C34	.047 300V		P388N-047	DD-503	CUB3A3	4DP-3-473	GEM-4147	3TM-M47
C44	10000		BPD-01	DD-103	BTA10S8	CCD-103	B-110	5HK-S10
C45	10000 1400V		DAC-37	DD8-103	HVE20S	16DP-3-103	UAC-D10	BL-S10
C46	10000		BPD-01	DD-103	BTA10S8	CCD-103	B-110	5HK-S10
C47	150		BPD-00015	DD-151	LL07S	CCD-151	B-315	5GA-T15
C48	4700		BPD-0047	DD-473	BTA10D47M	CCD-473	B-347	5HK-D47
C49	1000 10%		DI-1000	DD-103	1B3Z8	CCD-103	GP310	10TS-D10
C40	470 10%		DK-470	DD-471	LR57T	CCD-471	GP347	10TS-T47
C41	1000 10%		DK-1000	DD-103	1B3Z8	CCD-103	GP310	10TS-D10
C42	2200		BPD-0023	DD-223	BTA10D22	CCD-223	B-322	5HK-D22
C43	1000 2000V		HVD-30-1000	DD80-102	HVB20X	VCM-35-102	2HV-310	BL-D10
C44	.047 600V 10%		V8AC8S47-10%		P488M7	6DP-3-473	GEM-4515	6TM-S47
C45	.1 500V		P668N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C46	.047 500V		P668N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C47	.047 800V		P668N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C48	.01 600V		P668N-01	DD-103	CUB6S8	6DP-2-103	GEM-611	6TM-S8
C49	4700		BPD-0047	DD-473	BTA10D47M	CCD-473	B-374	5HK-D47
C50	.047 200V		P388N-047	DD-503	CUB3S47	4DP-3-473	GEM-4147	3TM-S47
C51	2900 10%		1664-0029		1R5D8	CM-2GB-292K	MCB463	MB-3S9
C52	680 10%		1468-00068	DD-681	1R5T68	CM-2GB-681K	MCJ349	MB-3S8
C53	680 10%		1468-00068	DD-681	1R5T68	CM-2GB-681K	MCJ349	MB-3S8
C54	4700		BPD-0047	DD-473	BTA10D47M	CCD-473	B-347	5HK-D47
C55	.047 600V		P668N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C56	.027 1000V		P184MC3M-027	DD8-302	CUB1D3	16DP-2-303	GEM-1013	10TM-S3
C57	.047 200V		P188N-047		CUB3S47	16DP-3-473	GEM-1147	10TM-S47
C58	330 2000V N1500 10%	#CC-119					**	
C59	330 2000V N1500 10%	#CC-119					**	
C60	130 2000V N750 5%						**	
C61	1000 1000V		BPD-001	DD-102	BTA10D1	CCD-103	B-310	5HK-D10
C62	1000 1000V		BPD-001	DD-102	BTA10D1	CCD-103	B-310	5HK-D10
C63	1500		BPD-0015	DD-152	BTA10D15	CCD-152	B-315	5HK-D15
C64	1500		BPD-0015	DD-152	BTA10D15	CCD-152	B-315	5HK-D15
C65	5000		BPD-005	DD-502	BTA10D5	CCD-502	B-350	5HK-D50
C66	5000		BPD-005	DD-502	BTA10D5	CCD-502	B-350	5HK-D50
C67	.1 600V 10%		V8AC8P1-10%		P8M3P1	6DP-4-104		6TM-P1

* Alternate value #Truetone Part Number . Note 1. Not used in some versions.
** Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS -IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K		VC-120			B13-133	PP55A	Volume
B	Switch					Not Req.	Not Req.	Push-Pull Off-On

CONTROLS (cont)

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS -IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R2A	1000Ω		VC-195	F1-5		† CU-1129	■ UE4067	Contrast
B	5000Ω			R2-19				Vert. Lin.
R3A	200K		VC-194	F1-33		† CU-1130	▲ UE-413	Vert. Hold
B	2.5meg			R2-78				Vert. Size
R4A	100K		VC-84	BX-40	B47-100K-S	B11-128	PTA15L	AGC
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R5A	100K		VC-84	BX-40	B47-100K-S	B11-128	PTA15L	Brightness
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	

† "Concentrinti" Equivalent: K-15 Kit with Base Elements & Shafts: B17-108, P17-028 (Panel) B11-114, R15-005 (Rear)
† "Concentrinti" Equivalent: K-15 Kit with Base Elements & Shafts: B11-139, P17-028 (Panel) (Not available as a factory assembled unit) B11-239, R15-005 (Rear)
■ "STA-LOC" Equivalent: FA3R, RU55L, C6875A, 19437.
▲ "STA-LOC" Equivalent: FA3L, RU85L, C6875A, 19437.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R6	330Ω	
R7	10meg	
R8	3meg 5%	
R9	4700Ω	
R10	1000Ω	
R11	150K	
R13	2.2meg	
R13	39K	
R14	470Ω	
R15	220K	
R16	47Ω	
R17	22K	
R18	220K	
R19	4700Ω	
R20	470Ω	
R21	3300Ω	
R22	68Ω	
R23	18K	
R24	470Ω	
R25	150K	
R26	6800Ω	
R27	100Ω	
R28	47K	
R29	1200Ω	
R30	33Ω 5%	Note 1
R31	180Ω	
R32	7500Ω 5W	#WR-46
R33	47K	
R34	39K	
R35	39K	

ITEM No.	RATING	REMARKS
R36	56K	
R37	390K	
R38	18K	(18K)*
R39	270K	
R40	82K	
R41	8200Ω 1W	
R42	4.7meg	
R43	56K	
R44	100K	
R45	100K	
R46	330K	
R47	100K	
R48	560K	
R49	6800Ω	
R50	680Ω	
R51	1meg 5%	
R52	180Ω	
R53	1meg 5%	
R54	220Ω 2W	
R55	4.7meg	
R56	680Ω	
R57	5600Ω	
R58	2200Ω	
R59	2.2meg	
R60	3300Ω	
R61	220K	
R62	820K 5%	
R63	56K	
R64	2.2meg	
R65	220K	

ITEM No.	RATING	REMARKS
R66	100Ω	
R67	3900 1W	
R68	39K 1W	
R69	39K 5%	
R70	220Ω	
R71	220Ω	
R72	3.9Ω Cold	#IR-284
R73	100K	
R74	100K	
R75	4.7meg	
R76	470K	
R77	22K 3W	
R78	8000Ω 5%	#IR-285
R79	100K	
R80	56K	
R81	18K	
R83	1500Ω 5%	
R83	100Ω	
R84	470K	(1meg)*
R85	12K 3W	
R86	150K	
R87	470K	
R88	4700Ω	
R89	1.2Ω 1W	
R90		#F-9
R91	27Ω 10W	#WR-36
R92	5Ω 5W	#WR-42
R93	5.6Ω	#F-8-1
R94	470K	

*Truetone Part Number * Alternate value. Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L2	Ant. Matching Coil	L-157						
L2	1st Video IF	L-150				6231 *		
L3A	2nd Video IF	L-103	17-5003	17-5003				
B	41.25MC Trap							
L4A	3rd Video IF	L-165	17-5003	17-5003	TV-128	6233		
B	47.25MC Trap							
L5	4th Video IF	L-152						
L6	RF Choke	L-160	19-1005	19-1006	BC-566	4612		10.4uh
L7	RF Choke	L-158						27.5uh
L8A	Sound Take-Off	L-154						
B	4.5MC Trap							
L9	Series Peaking Coil	L-162						①
L10	Shunt Peaking Coil	L-163						②
L11	2nd Sound IF	L-167						
L12	Quadrature Coil	L-110A	17-1031 ▲	17-1031 ▲		1461 ▲	SD-5 ▲	

* Disregard secondary winding.
▲ Parallel with 100K resistor
① Wound on 4700Ω resistor.
② Wound on 10K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	NOTES
L13	97Ω		L-156	HS-5 *	TV-163 *	6210 *	H-102 *	HS-5 *	Horiz. Stabilizer * Enlarge mounting hole.

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA: TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L14	.240A	49Ω	1 Hy.	FC-5B						

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Vert. Output	TR-50B	26814		V319			26814	A-140X
T2	Yoke-Horiz.(15.7MH) (10°)-Vert. (13.5MH) Rear Cover & Centering Device Yoke Clamp	L-149B ①②③ MP-165	Y-52 ①②③		Y-110 ①②④		DY-37A ①②③	Y-52 ①②③	V-60 & YW-25③⑤ YC-110
T3	Horiz. Output	ST-58 TR-51A	FLY-137*	HVO-152 *	X162 *	EFRIT2 *	HO-304 *	FLY-137*	D-151R *

① Use original rear cover, centering device, and yoke clamp.
② Use original yoke plug.
③ Connect as original.
④ Connect yoke terminal #3 to yoke plug pin #3, yoke #1 and #3 to plug #4, yoke #10 to plug #5.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

	ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
	5	5	5	5	5	5	5	5 & 4
	6	6	6	6	4	6	6	6
	7	7	7	7	2	7	7	7
	8	8	8	8	1	8	8	8
	2	1	2	2	7	2	1	2
	1	2	1	1	8	1	2	1
Special Notes →					⑤			

⑤ Remove one turn from filament winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	2600Ω	3-4Ω	AT-52	24853	A-3025	AU-805	A-3332	24853	S-12X	

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: TRUETONE PART No.	OHAN PART No.	NOTES
SP1	4"	PM	3-4Ω	SPK-49	4A07	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATE
K1	Vert. Integrator	470mmf, 10000mmf, 15K, 15K	CC-120	

RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: TRUETONE PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.240A	SR-14 ①	SD500 ①	HF504 ②	40K ①	SR500 ①	① Silicon Type.
M2	.240A	SR-14 ①	SD500 ①	HF504 ②	40K ①	SR300 ①	② Dual Sel. Diode
M3		SR-15 ②	SD61 ① ②	K1615 ②			③ Two required.

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: TRUETONE PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M4	1N87	SC-33	1N87	1N87	1N80	Video Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M5	Tuner	TA-56	VHF with UHF provisions
	Tuner	TA-49	UHF
M6	Antenna	L-165	Telescopic (JFD Replacement Type #TA385)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

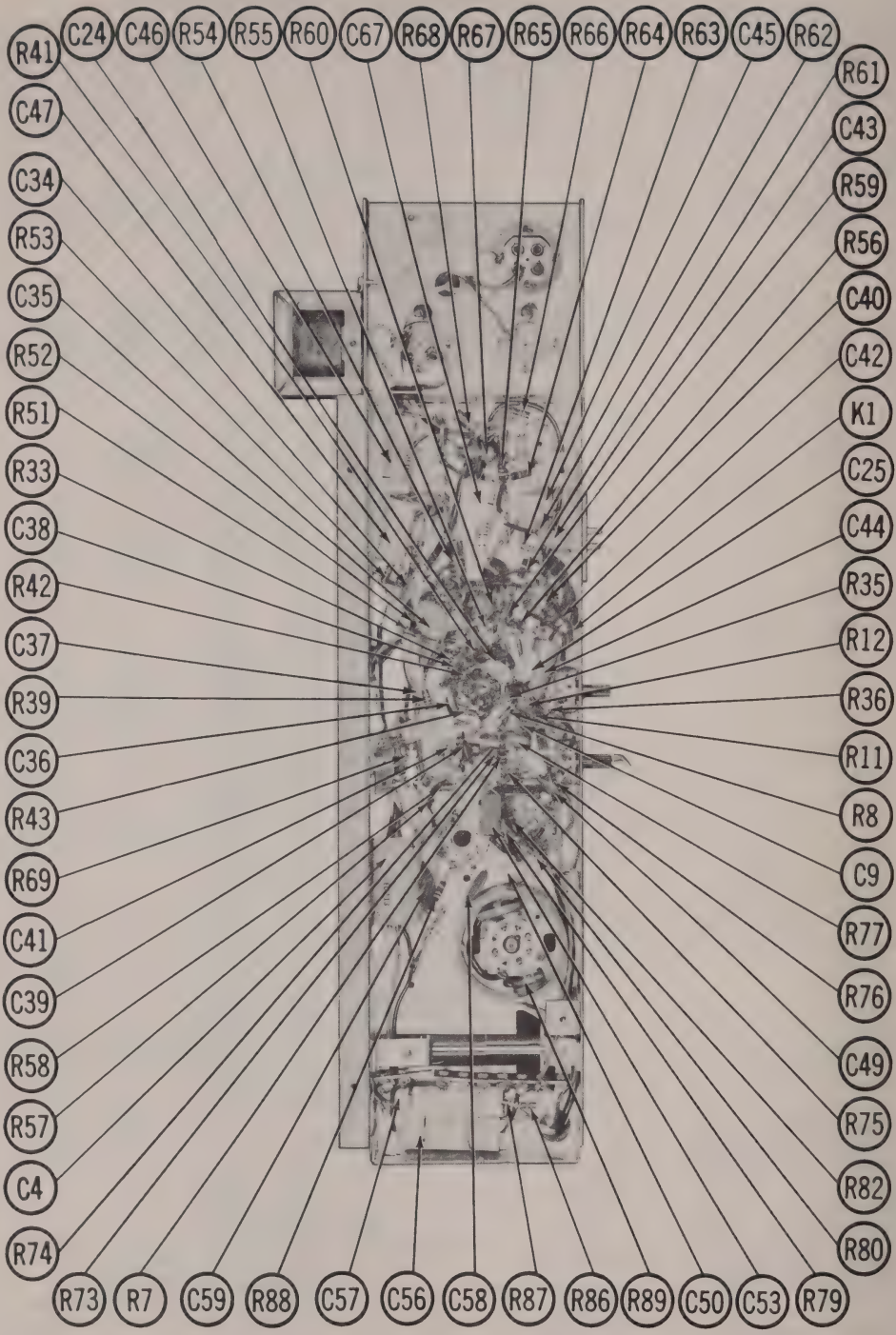
NAME	PART NO.	DESCRIPTION
Safety Glass	MP-139	
Knob	K-349	VHF Channel Selector
Knob	K-369	UHF Channel Selector
Knob	K-350	Fine Tuning
Knob	K-370	UHF Channel Indicator
Knob	K-355	Off-On-Volume
Knob	K-354	Contrast, Vert. Hold
Handle	CH-116	
Cabinet Front	MP-140	
Cabinet Back	MP-141	

WIRING DATA

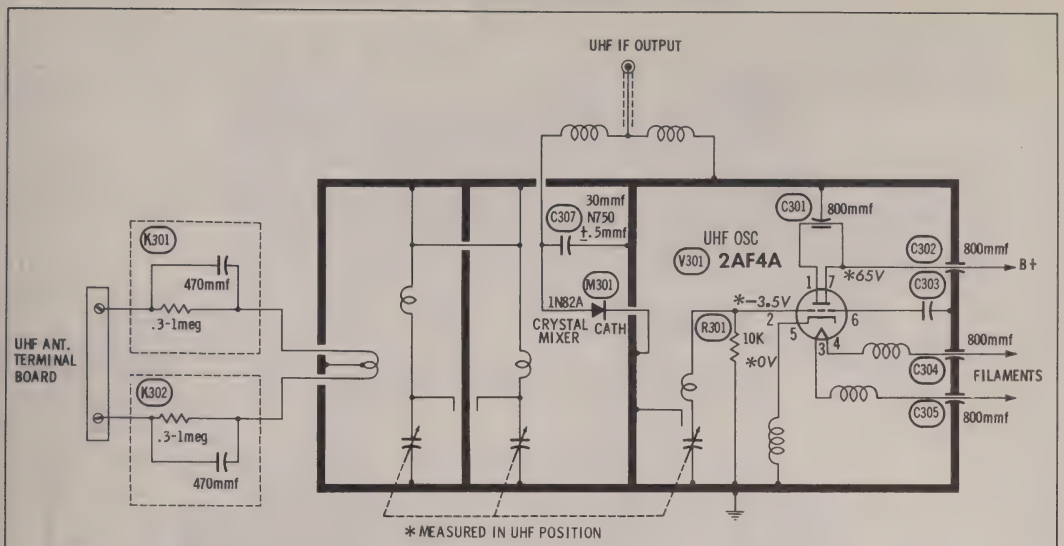
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8534 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8235
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8486 (Round) - 6 Conductor 8488 (Round) - 8 Conductor

TRUETONE MODELS 2DC3000, 2DC3001

FOLDER 2



LOWER CHASSIS-BOTTOM VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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TUBES

CBS	GENERAL ELECTRIC	RAYTHEON	SYLVANIA

ITEM No.	USE	TYPE
V301	UHF Osc.	2AF4A

ITEM No.	USE	TYPE

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	800		EF-001	MFT-1000		CCF-102	CT280A	
C302	800		EF-001	MFT-1000		CCF-102	CT280A	
C303								
C304	800		EF-001	MFT-1000		CCF-102	CT280A	
C305	800		EF-001	MFT-1000		CCF-102	CT280A	
C306	1000		BPD-001	DD-102	BYA10D1M	CCD-102	GP210	
C307	30 N750 ±.5mmf							10TCU-Q30

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		PART No.	NOTES
	OHMS	WATT		
R301	10K			

ITEM No.	RATING		PART No.	NOTES
	OHMS	WATT		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA	
K301	UHF Antenna Isolation	470mmf, .3-1meg		Centralab Sprague	RC-471 ACl-1
K302	UHF Antenna Isolation	470mmf, .3-1meg		Centralab Sprague	RC-471 ACl-1

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M301	1N82A		1N82A	1N82A	1N82A	UHF Mixer (Clip-in)

TUNER ALIGNMENT INSTRUCTIONS
TA-56

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment. The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A201 thru A212 ..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987
WALSCO #2531
A213, A214, A215..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2525

VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Set the Fine Tuning to the center of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Amp. thru 47K across Video Det. load.	A201	Adjust to place sound marker in trap notch as in Fig. 201. Video marker should fall at 50%.
			207MC	205.25MC 209.75MC	12		A202	
			201MC	199.25MC 203.75MC	11		A203	
			195MC	193.25MC 197.75MC	10		A204	
			189MC	187.25MC 191.75MC	9		A205	
			183MC	181.25MC 185.75MC	8		A206	
			177MC	175.25MC 179.75MC	7		A207	
			85MC	83.25MC 87.75MC	6		A208	
			79MC	77.25MC 81.75MC	5		A209	
			69MC	67.25MC 71.75MC	4		A210	
			63MC	61.25MC 65.75MC	3		A211	
			57MC	55.25MC 59.75MC	2		A212	

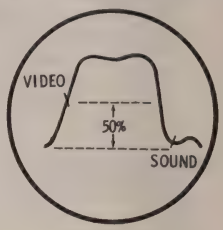


FIG. 201

VHF RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.
Connect the negative lead of a 4.5 volt bias supply to point (T). Positive to chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
2.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point (U). Low side to chassis.	A213, A214, A215	Adjust A213 and A214 for maximum amplitude and symmetry with markers as shown in Fig. 202. Increase bias for MINIMUM amplitude of response curve. Without changing the bias adjust A215 to obtain MINIMUM response on the scope. Restore bias.
3.	"	"	213MC	211.25MC 215.75MC	13	"	A216	Adjust for maximum amplitude of response similar to Fig. 202. Adjust by compressing or expanding coil turns.
			207MC	205.25MC 209.75MC	12		A217	
			201MC	199.25MC 203.75MC	11		A218	
			195MC	193.25MC 197.75MC	10		A219	
			189MC	187.25MC 191.75MC	9		A220	
			183MC	181.25MC 185.75MC	8		A221	
			177MC	175.25MC 179.75MC	7		A222	
			85MC	83.25MC 87.75MC	6		A223	
			79MC	77.25MC 81.75MC	5		A224	
			69MC	67.25MC 71.75MC	4		A225	
			63MC	61.25MC 65.75MC	3		A226	
			57MC	55.25MC 59.75MC	2		A227	

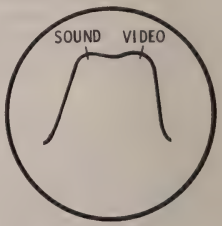
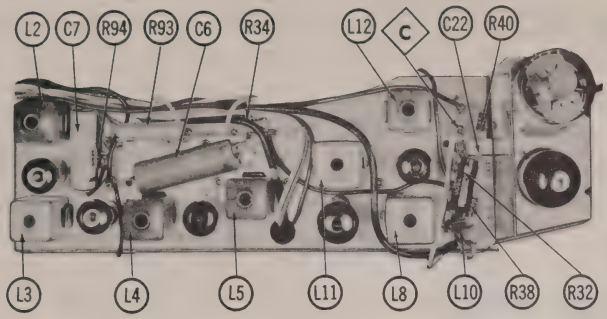
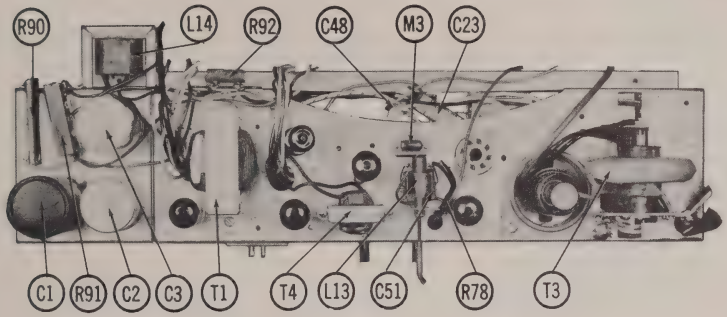


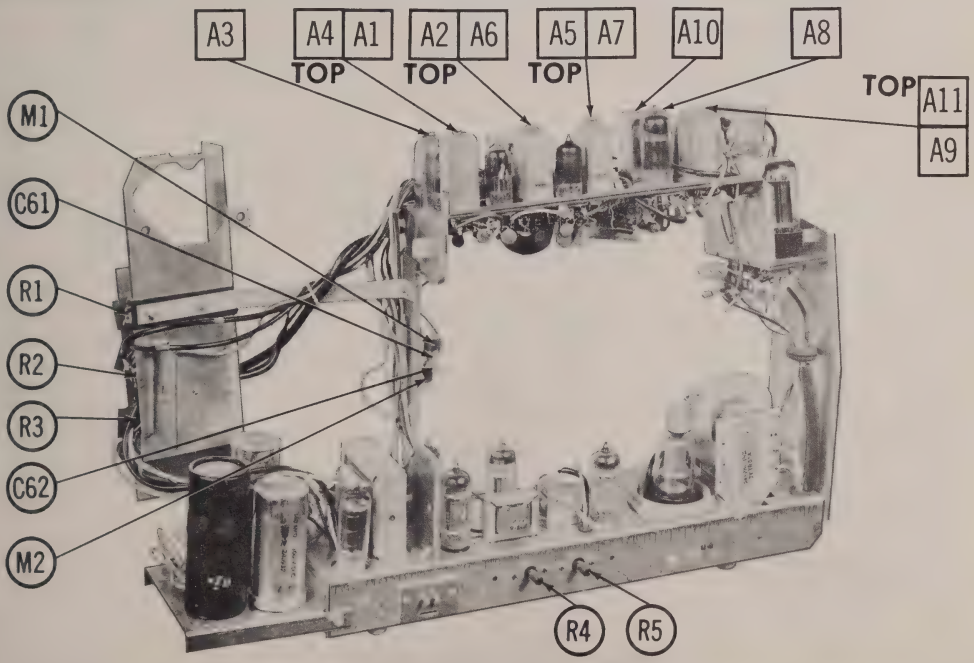
FIG. 202



UPPER CHASSIS-TOP VIEW



LOWER CHASSIS-TOP VIEW



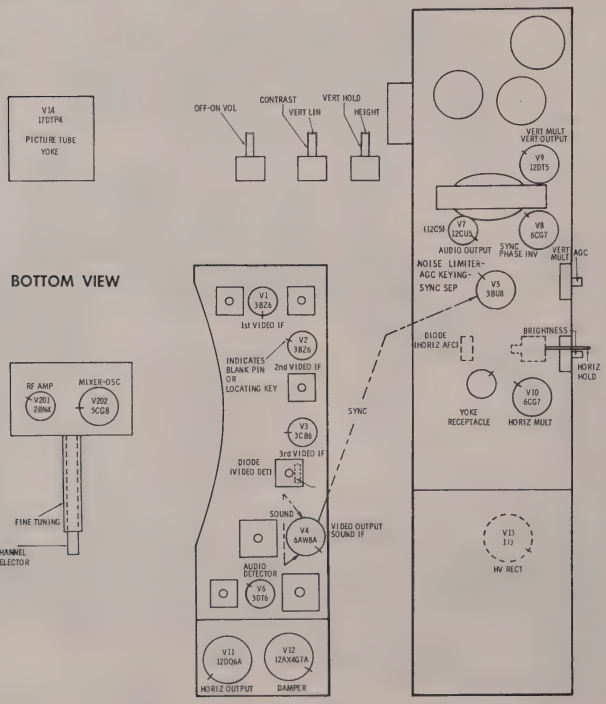
CHASSIS-REAR VIEW

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	140K	47Ω	6.5Ω	6Ω	▲ 470Ω	▲ 470Ω	0Ω		
V2	3BZ6	▲ 22K	▲ 68Ω	6Ω	5.5Ω	†470Ω	†470Ω	120K		
V3	3CB6	.1Ω	150Ω	5.5Ω	5Ω	■ 470Ω	■ 470Ω	0Ω		
V4	6AW8A	0Ω	100K	■ 100K	3.5Ω	5Ω	● 45Ω	6900Ω	■ 1200Ω	†7500Ω
V5	3BU8	■ 0Ω	†8200Ω	2.3meg	14Ω	13Ω	†35K	†390K	†40K	■ 4.7meg
V6	3DT6	18.5Ω	680Ω	3.5Ω	2.5Ω	†330K	■ 8200Ω	560K		
V7	12CU5/ 12C5	¶	550K	13Ω	10.5Ω	550K	†220Ω	†450Ω		
V8	6CG7	● †1.2meg	220K	● 110K	9Ω	10.5Ω	†12K	2meg	3300Ω	0Ω
V9	12DT5	†100Ω	NC	2.2meg	9Ω	6.5Ω	2.2meg	● 650Ω	NC	†375Ω
V10	6CG7	†9200Ω	2.8meg	1500Ω	14Ω	15.5Ω	†100K	56K	1500Ω	0Ω
V11	12DQ6A	NC	15.5Ω	NC	†12K	470K	TP	18Ω	0Ω	TOP CAP †9Ω
V12	12AX4GTA	NC	NC	¶700K	NC	†0Ω	NC	21Ω	18Ω	
V13	1J3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †470Ω
V14	17DTP4	2.5Ω	39K	†150K	†0Ω	NC	39K	● 120K	1.5Ω	
V201	2BN4	0Ω	3.7meg	0Ω	.5Ω	■ 1300Ω	0Ω	3.7meg		
V202	5CG8	10K	■ 5900Ω	0Ω	1.5Ω	.5Ω	■ 1300Ω	■ 10K	0Ω	320K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
▲ MEASURED FROM PIN 7 OF V2.
■ MEASURED FROM 150V SOURCE.
† MEASURED FROM 270V SOURCE
† MEASURED FROM PIN 3 OF V12.

NC NO CONNECTION.
TP TIE POINT.



TUBE PLACEMENT CHART

CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the Brightness and Contrast controls for a normal picture.

Turn the Horizontal Frequency (Hold) clockwise until the picture loses sync. It may be necessary to switch off channel and back again for picture to lose sync.

Turn the Horizontal Frequency slowly counterclockwise until the picture just falls into sync.

PHOTOFACT® Folder with CIRCUITRACE®

ARVIN MODELS 1093, 8092, 8093 (Ch. 1.48300, 1.48600)

ARVIN MODELS 1093, 8092, 8093 (Ch. 1.48300, 1.48600)

MODEL 8093

ARVIN MODELS 1093, 8092, 8093 (Ch. 1.48300, 1.48600)

TRADE NAME	Arvin Models 1093, 8092, (Ch. 1.48300); 8093 (Ch. 1.48600)
MANUFACTURER	Arvin Industries, Inc., Columbus, Indiana
TYPE SET	AC Operated 4 Tube Stereo Phono Amplifier With Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 32 Watts, .31 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON 45 RPM RECORD CHANGER USED IN MODEL 8092 — SEE V-M 1500 — PHOTOFACT SET 426 FOLDER 15

FOR SERVICE INFORMATION ON 4 SPEED AUTOMATIC RECORD CHANGER USED IN MODEL 8093 — SEE COLLARO CONQUEST (REVISED) — PHOTOFACT SET 408 FOLDER 6

SET 489 FOLDER 3

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JT878

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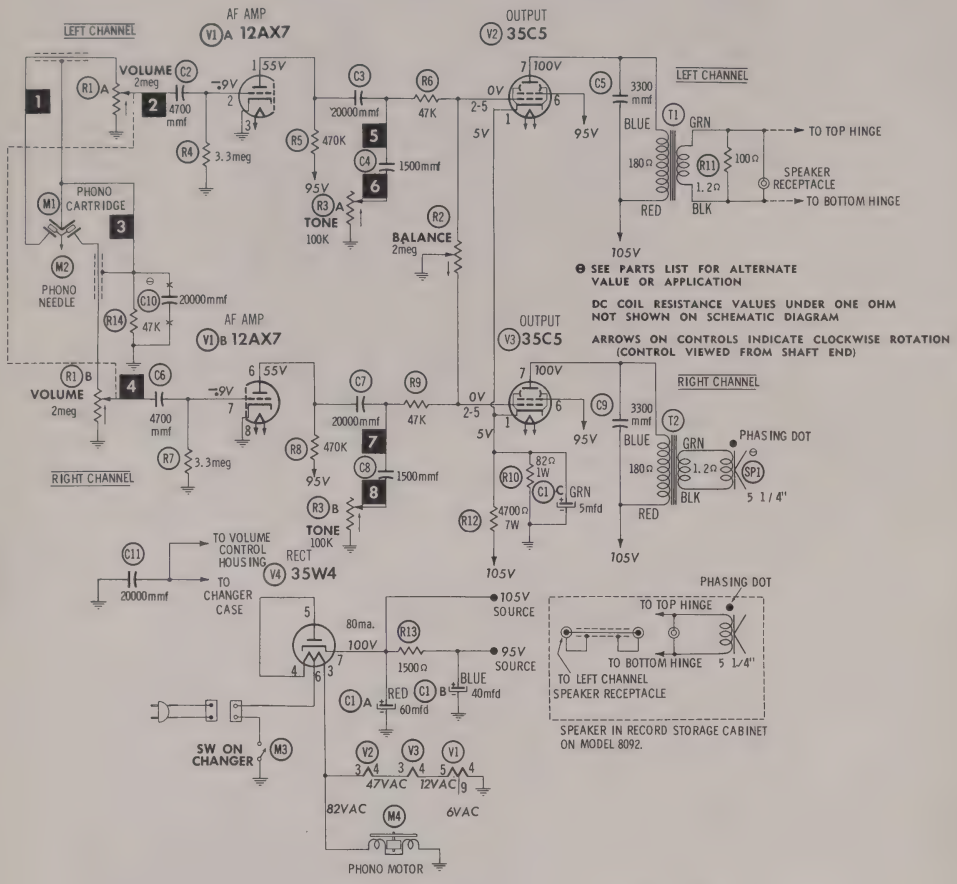

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†470K	3.3meg	0Ω	0Ω	12Ω	†470K	3.3meg	0Ω	6Ω
V2	35C5	82Ω	1meg	82Ω	47Ω	1meg	†1500Ω	†180Ω		
V3	35C5	82Ω	1meg	47Ω	12Ω	1meg	†1500Ω	†180Ω		
V4	35W4	NC	NC	82Ω	117Ω	117Ω	110Ω	¶		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V4. NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

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ARVIN MODELS 1093, 8092, 8093 (Ch. 1.48300, 1.48600)

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	Left Channel AF Amp. - Right Channel AF Amp.	12AX7
V2	Left Channel Output	35C5
V3	Right Channel Output	35C5
V4	Rectifier	35W4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ARVIN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	447772-4	PR4-125	BBRQ55515C	WT630	TDLT-18	TVAS-3436, 3*	
B	40	150							
C	5	25							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	GP247	5HK-D47
C3	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C4	1500		BPD-0015	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C5	3300		BPD-0033	DD-332	BYA10D33	CCD-332	GP233	5HK-D33
C6	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	GP247	5HK-D47
C7	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C8	1500		BPD-0015	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C9	3300		BPD-0033	DD-332	BYA10D33	CCD-332	GP233	5HK-D33
C10	20000	Note 1	BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C11	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ARVIN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg		47100-3					Volume, Left Channel
B	2meg							Volume, Right Channel
R2	2meg		45250-18					Banance
R3A	100K		47100-4					Tone, Left Channel
B	100K							Tone, Right Channel

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	3.3meg	
R5	470K	
R6	47K	
R7	3.3meg	

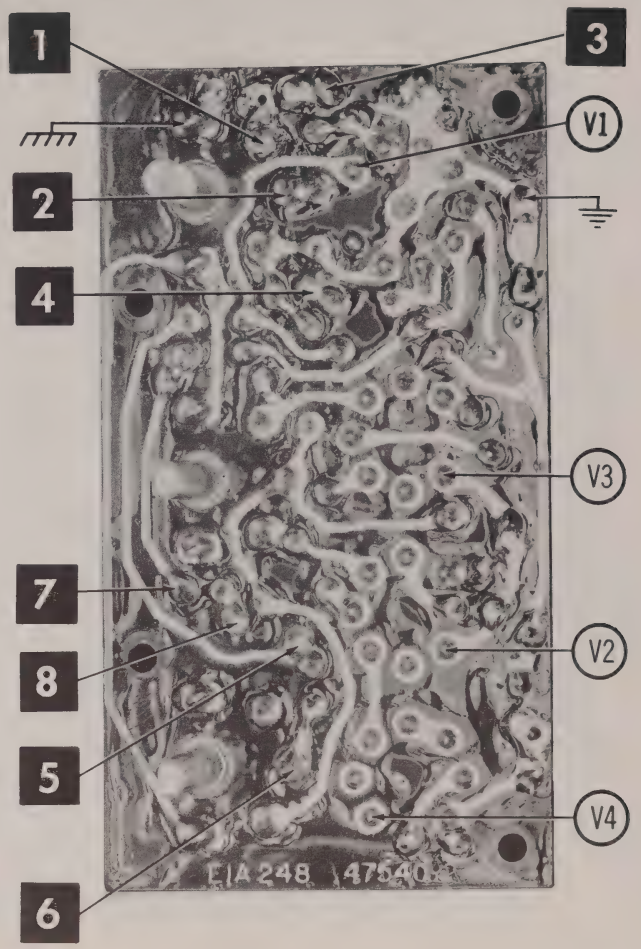
ITEM No.	RATING	REMARKS
R8	470K	
R9	47K	
R10	82Ω 1W	
R11	100Ω	

ITEM No.	RATING	REMARKS
R12	4700Ω 7W	
R13	1500Ω	
R14	47K	

PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



FOLDER 3

ARVIN MODELS 1093, 8092, 8093 (Ch. 1.48300, 1.48600)

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	ARVIN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2600Ω	6-8Ω	46200-1							
T2	2600Ω	6-8Ω	46200-1							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ARVIN PART No.	QUAM PART No.	
SP1	5 1/4"	PM	6-4Ω	46408-3	6A1Z6.9	
	5 1/4"	PM	6-8Ω	46408-3	6A1Z6.9	
	6"	PM	6-8Ω	47599-1 ‡		‡ Model 8092
	5 1/4"	PM	6-8Ω	46408-3 *	6A1Z6.9	* Model 1093 Speaker Cabinet used with Model 8093.

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							
	ARVIN PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1		13T	Not Req.	13	Not Req.			10T2-S *	Not Req.

* Includes Mounting.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	ARVIN PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M2		* W-204DS † or * W-204DD-1 ♦	* A-44X † or * A-44XSD †♦ or A-44XDD ♦	† Jewel ♦ Diamond * Includes Cartridge

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M3	Switch		Off-On (Part of Changer)
M4	Motor		Turntable Drive (Part of Changer)

CABINETS & CABINET PARTS

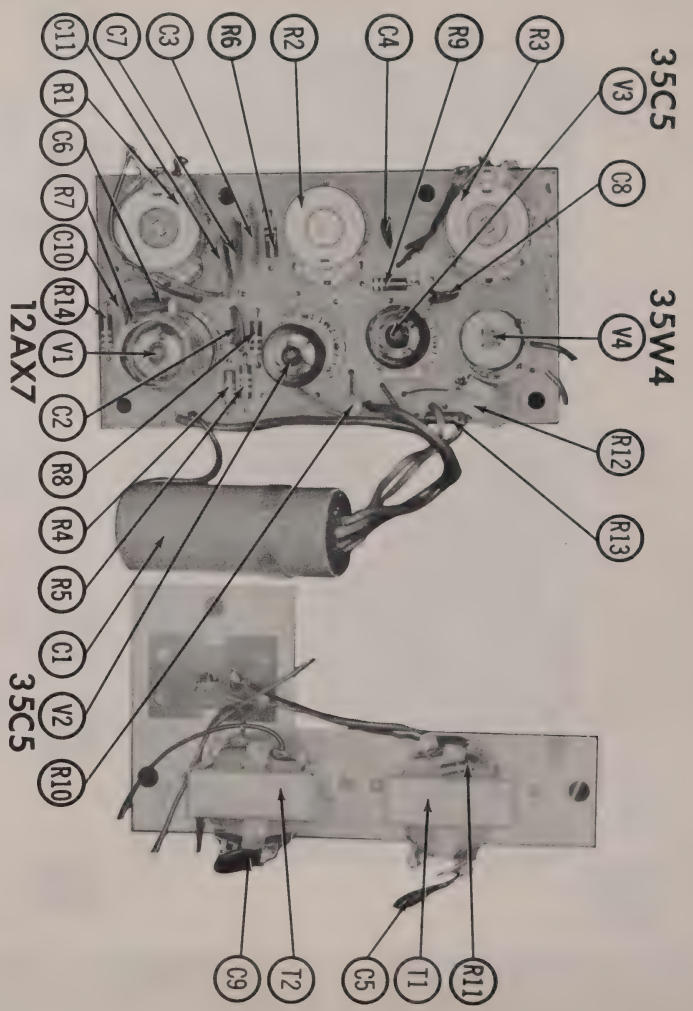
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	47580	Volume
Knob	47579	Tone
Knob	47578	Balance
Cabinet	47522-168	Model 8092
Cabinet	47627-178	Model 8093
Cabinet	47584-168	Speaker (Model 1093 used with Model 8092)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—TOP VIEW



PHOTOFACT® Folder

TRADE NAME	Automatic Model P-57
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston 15, Mass.
TYPE SET	AC-DC-Battery Operated 5 Tube Portable AM Receiver
POWER SUPPLY	105-125 Volts AC-DC (or) 3 Volts DC "A" Supply & 90 Volts DC "B" Supply
RATING	11 Watts, .18 Amp. @ 117 Volts AC (or) 150MA @ 3 Volts DC & 15MA @ 90 Volts DC
TUNING RANGE	BROADCAST 538 - 1610KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4, A7 ..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6, A8, A9 .... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 6 (grid) of Converter. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	High side thru .1mfd to pin 6 (grid) of RF Amp. Low side to chassis.	1610KC	"	"	A5	"
3.	"	1400KC	Tune to 1400KC signal	"	A6	"
4.	"	600KC	Tune to 600KC signal	"	A7	"
5.	Loop	1400KC	Tune to 1400KC signal	"	A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. If A8 has insufficient range to reach a peak set to center of its range, adjust A9 for maximum output.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JF745

AUTOMATIC
MODEL P-57
AUTOMATIC
MODEL P-57
SET489 FOLDER 4

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier	1U4 ①	V4	DET - AVC - AF Amp	1U5
V2	Converter	1R5	V5	Output	3V4
V3	IF Amplifier	1U4 ①			

Note 1. Some versions may use 1T4 in this application.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	AUTOMATIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲50	150	CE-305A	AFH3-76-55	XCO555	WP308.1	TMT-169	TVL-3413.8	
B	■50	150							
C	250	10							
C2	25	50	CE256-50	PRS1340	BBR25-50	TC36	TD-25-50	TVA-1306	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3			Note 1						
C4	100			1468-0001	DD-101	5W5T1	CM-19B-101M	MC235	1FM-310
C5	.047	200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C6	.047	200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C7	10000		(15000) †	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C8	220			DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C9	100			1468-0001	DD-101	5W5T1	CM-19B-101M	MC235	1FM-322
C10	10000		(5000) †	BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C11	100			1468-0001	DD-101	5W5T1	CM-19B-101M	MC235	1FM-310
C12	2000			BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C13	100			1468-0001	DD-101	5W5T1	CM-19B-101M	MC235	1FM-310
C14	2000			BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C15	.047	400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C16	.1	400V	Note 2	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C17	220		Note 1	DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22

Note 1. Not used in some versions.
Note 2. Includes 7 turns of single strand wire.
† Alternate value

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AUTOMATIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	750K	½	RV-305	B-70-S	A47-750K-Z	Q13-137	U51	Volume
B	Shaft			Not Req.	FS-3	Not Req	Not Req	
C	Switch			Not Req.	SWE-20	76-2	US-27	Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

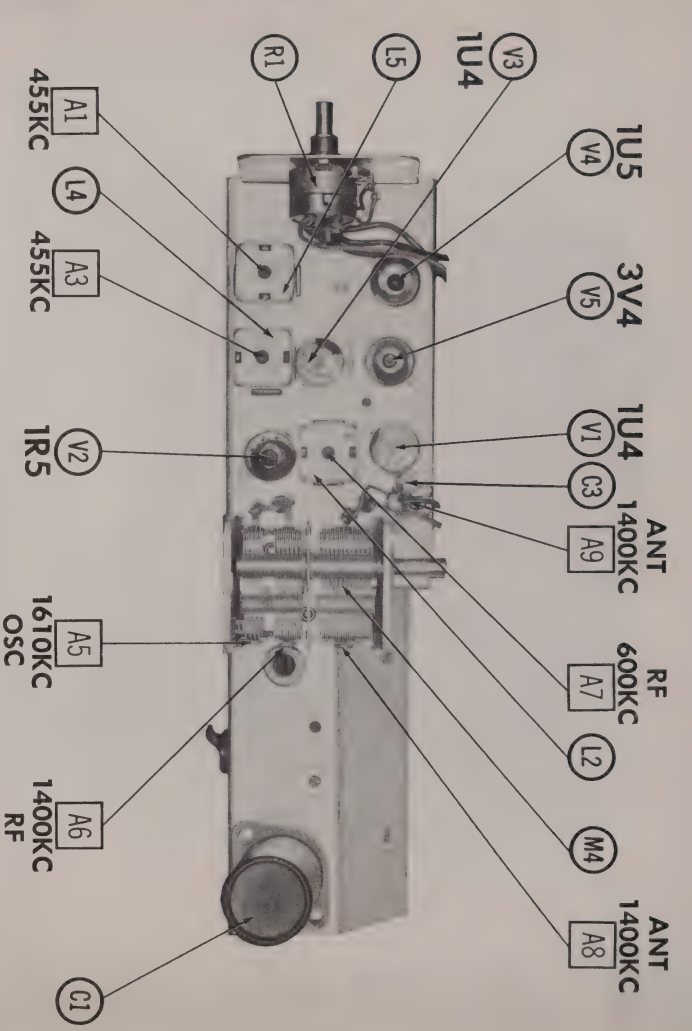
ITEM No.	RATING	REMARKS
R2	56K	
R3	2.2meg	
R4	2.2meg	
R5	2.2meg	
R6	270K	(470K) *
R7	56K	
R8	10K	

ITEM No.	RATING	REMARKS
R9	150K	
R10	10meg	
R11	10meg	
R12	220Ω 1W	Note 1
R13	2050Ω 7W	#PW7
R14	1500Ω 2W	
R15	560Ω	

ITEM No.	RATING	REMARKS
R16	3300Ω 1W	(3600Ω) *
R17	47Ω 2W	(100Ω) *
R18	1000Ω	
R19	1500Ω	
R20	820Ω	
R21	270K	

Automatic Part Number
* Alternate Value
Note 1. Not used in some versions.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		AUTOMATIC PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	L-A51	14-9017	14-9017	BC-419			
L2	RF Coil	L306A						
L3	Osc. Coil	L305						
L4	1st IF Trans.	1655-6	16-6758	16-6758	BC-352	12-C1	RF-1	
L5	2nd IF Trans.	1655-6	16-6758	16-6758	BC-353	12-C2	RF-2	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	4000Ω	3-4Ω	(Part of SP1)	24S48	A-3026		A-3328	24S48	S-6X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	AUTOMATIC PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	PM-45 *	5A1	* Includes T1

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AUTOMATIC PART No.	REPLACEMENT DATA
K1	Audio Coupling	50mmf, 2000mmf, 5000mmf, 1meg, 2.2meg, 4.7meg		Aerovox PA-116-1 Centralab PC-90 Cornell-Dubilier 114TM1 Sprague P-1

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	AUTOMATIC PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.060A	SR-1 ‡	RS075 ‡	1003A ‡	75 ‡	SR200 ♦	‡ Selenium Type ♦ Silicon Type

BATTERIES

ITEM No.	VOLTAGE	AUTOMATIC PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M2	1.5V	*	2IR *		964 *		M20 *		*2 Used
M3	45V	*		XX30 *		455 *		M-201 *	

MISCELLANEOUS

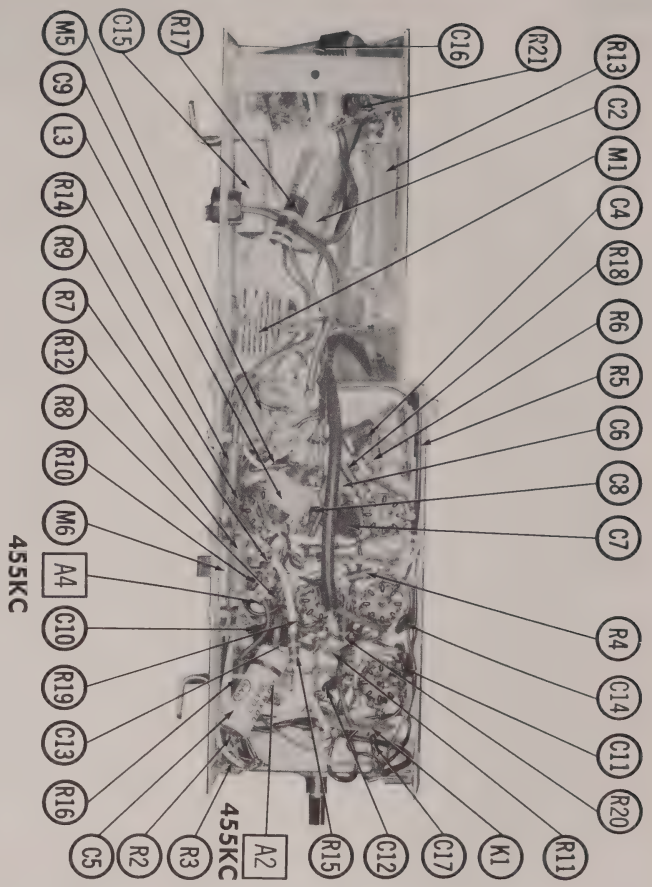
ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
M4	Tuning Cap	CV-305	3 Gang; Ant 15-420mmf, RF 10-225mmf, Osc 9-84mmf
M5	Switch	SW-305	Power Selector
M6	Switch	SS-150	"Radio Charge" (DPDT Slide Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	H45-5	Tuning
Knob	H60	Volume

CHASSIS—BOTTOM VIEW

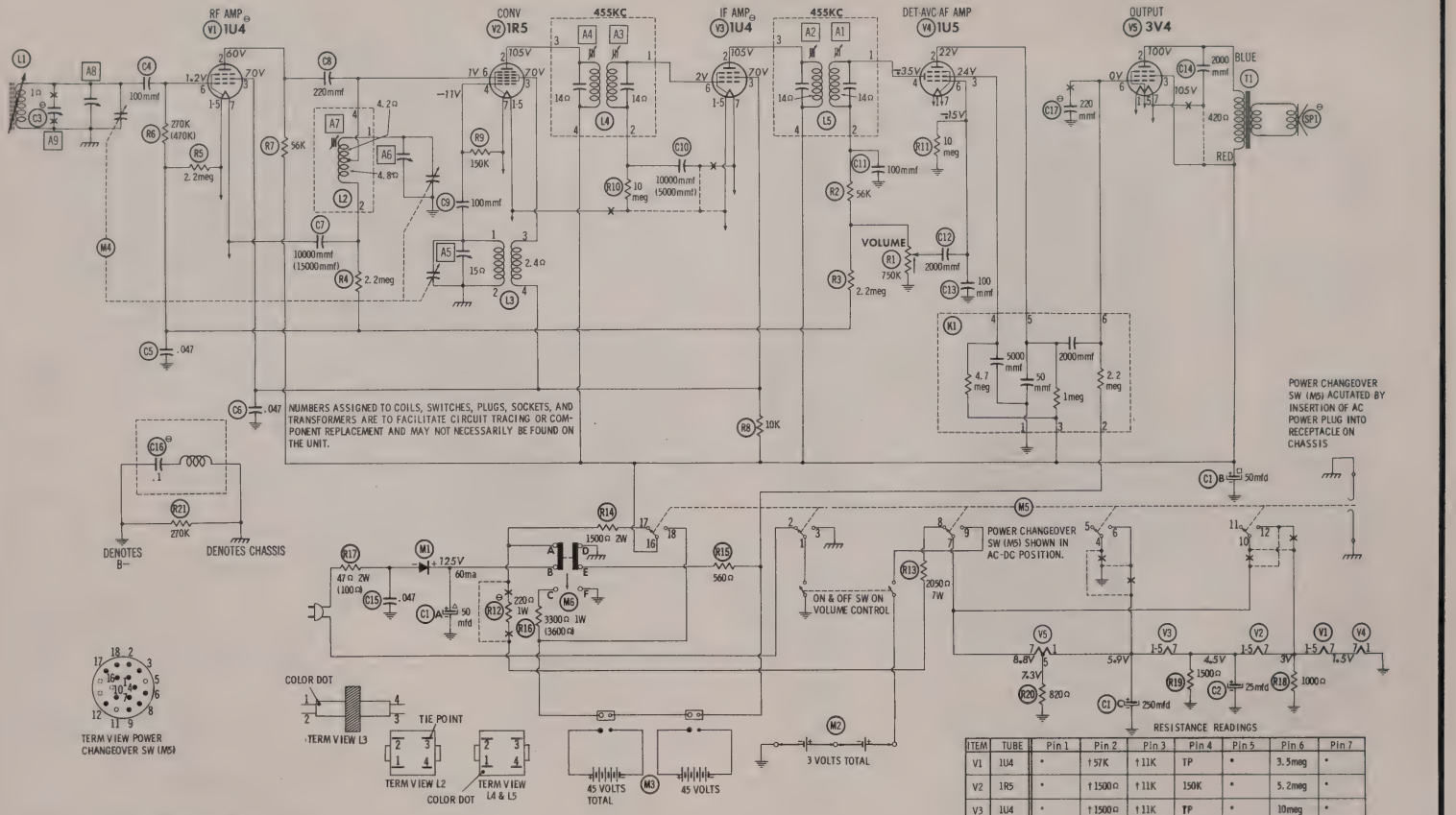


WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

FOLDER 4

AUTOMATIC
MODEL P-57


RF AMP V1 1U4
CONV V2 1R5
455KC
IF AMP V3 1U4
455KC
DET-AVC-AF AMP V4 1U5
OUTPUT V5 3V4
VOLUME
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.
POWER CHANGEOVER SW (MS) ACTUATED BY INSERTION OF AC POWER PLUG INTO RECEPTACLE ON CHASSIS
POWER CHANGEOVER SW (MS) SHOWN IN AC-DC POSITION.
ON & OFF SW ON VOLUME CONTROL
DENOTES B−
DENOTES CHASSIS
TERM VIEW POWER CHANGEOVER SW (MS)
TERM VIEW L3
TERM VIEW L2
TERM VIEW L4 & L5
COLOR DOT
TIE POINT
45 VOLTS TOTAL
45 VOLTS
3 VOLTS TOTAL
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	1U4	•	†57K	†11K	TP	•	3.5meg	•
V2	1R5	•	†1500Ω	†11K	150K	•	5.2meg	•
V3	1U4	•	†1500Ω	†11K	TP	•	10meg	•
V4	1U5	•	†1meg	†4.7meg	800K	NC	10meg	•
V5	3V4	•	†1900Ω	†1500Ω	TP	•	2.2meg	•

ALL VOLTAGES TAKEN IN "AC" POSITION.
† MEASURED FROM OUTPUT OF MI.
• DO NOT USE OHMMETER

NC NO CONNECTION
TP TIE POINT

❸ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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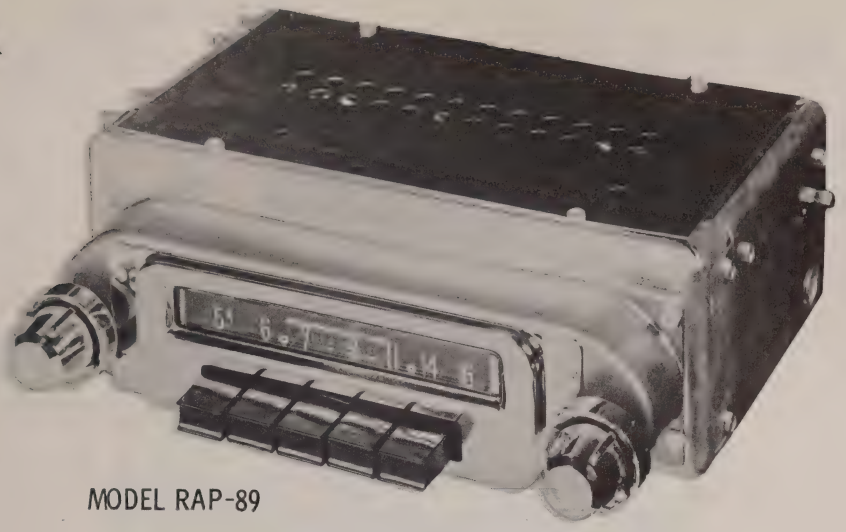
AUTOMATIC
MODEL P-57

PHOTOFACT® Folder

AUTOMATIC MODELS BAP-9, BP-679, CT-356, CTR-6B, DAP-39, DX-619, RAP-89, RP-519

AUTOMATIC MODELS BAP-9, BP-679, CT-356, CTR-6B, DAP-39, DX-619, RAP-89, RP-519



MODEL RAP-89

AUTOMATIC MODELS BAP-9, BP-679, CT-356, CTR-6B, DAP-39, DX-619, RAP-89, RP-519

TRADE NAME	Automatic Models BAP-9, BP-679 (For 1959 Buick), CT-356, CTR-6B (For 1955, 1956 Chevrolet), DAP-39, DX-619 (For 1959 Dodge), RAP-89, RP-519 (For 1959 Rambler)
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston 15, Mass.
TYPE SET	Battery Operated 4 Tube, 2 Transistor Custom Built Automobile AM Receiver
POWER SUPPLY	12 Volt Storage Battery RATING 1.2 Amp @ 12.6 Volts DC
TUNING RANGE	BROADCAST 538-1610KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
*Pushbutton versions 265KC
Manual versions 455KC
Suggested Alignment Tools: A1 thru A4.....GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A5, A6.....GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	High side thru .1mfd to pin 7 (grid) of Converter. Low side to chassis.	*See Note (400~ mod.)	High end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2	"	1610KC	"	"	A5	"
3	Antenna receptacle thru dummy (Fig. 1).	"	"	"	A6, A7	"
4	With radio installed in car and antenna fully extended, tune in a weak station near 1400KC and adjust A7 for maximum output.					

PUSHBUTTON ADJUSTMENT

1. Tune manually to desired station.
2. Pull button out, then press in firmly.
3. Repeat for remaining buttons.

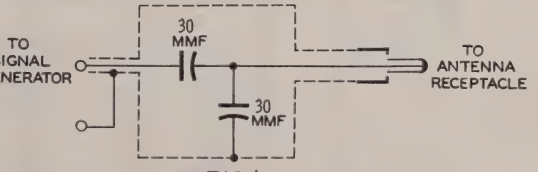


FIG. 1

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JD716

SET 489 FOLDER 5

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier	12BL6 (12AF6) *	V3	IF Amplifier	12BL6 (12AF6) *
V2	Converter	12AD6	V4	DET - AVC - AF Amp	12AE6A (12FT6) *

*Alternate

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N363	Driver		2N406	2N363	2N406	PNP
X2	GT1124	Output	2N236B			2N242	PNP Note 1

Note 1. When replacing, apply Silicone Compound between the transistor and chassis.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	AUTOMATIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	■500	15	20-317 ①	AFH3-00-95		WP200.6		TVLS-2157 *	
B	▲500	15							
C2	750	3	20-757	SRE3V500	BR1000-6	PETA190	TD-1000-6	TVAS-1097 *	

*Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Models BAP-9, BP-679, DAP-39, DX-619 use 500-150mfd (Part #20-315).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

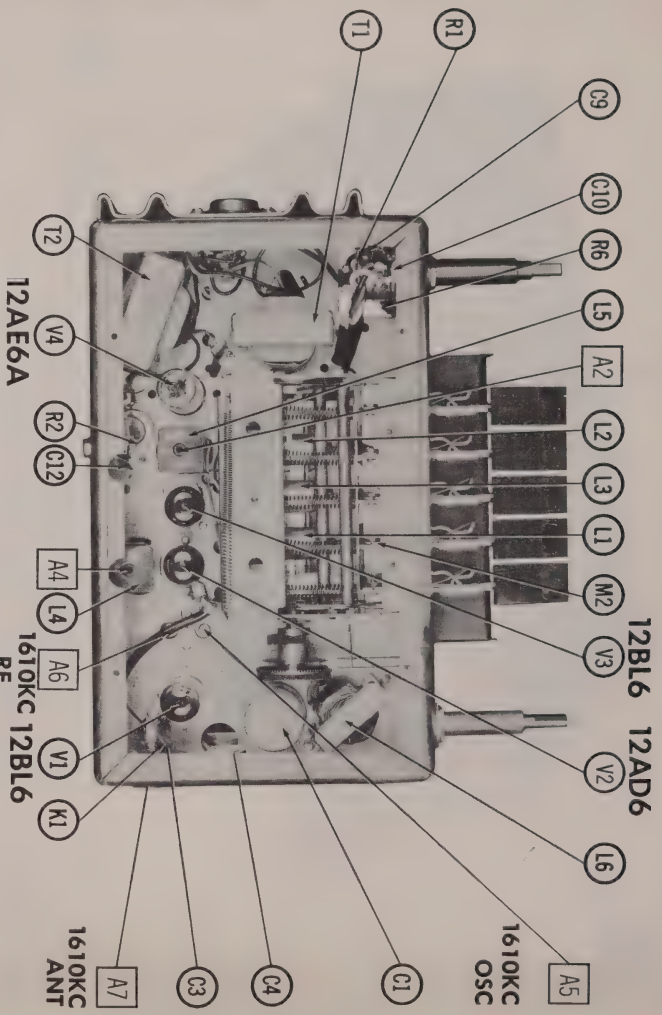
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3		#28-800K						
C4	40 NPO		NPO-DI39	TCZ-39	C10Q39C	CCTO-390	CNO-439	10TCC-Q39
C5A								
B		#28-4046						
C	40		NPO-DI39	TCZ-39	C10Q39C	CCTO-390	CNO-439	10TCC-Q27
C6	100 N750		N750-DI100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C7	5	(12) †	NPO-DI5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-550	10TCC-V50
C8	27 NPO		NPO-DI25	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C9	2000	(3000) †	BPD-002	DD-202	BYA10D5	CCD-202	GP220	5HK-D20
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C11	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C12	220	Note 1	DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22

Note 1 Not Used In Some Versions
Automatic Part Number
† Alternate Value

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AUTOMATIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	2meg	½	80-69	A/U-1	RTV-553C/ XB-2	† QJ-892A	■UE4018-S	Tone Note 1
B	500K							Volume Note 1
	100K tap							
C	Bushing			AK-26				
D	Switch			KR-4				Power Off On

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS (cont)

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AUTOMATIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R2	500Ω 100Ω stop	.2 (ww)	62-501		39-500-100	112-500-100	FL-600S	Bias

† "Concentrikit" equivalent: K-8 Kit with base elements and shafts: B13-139, P14-125 (Panel)
B13-133X, R1-205 (Rear)
S8 (Bushing)
76-1 (Switch)

■"STA-LOC" equivalent: FL26A, RU55T184, OS1812A, IS2312, US-41

Note 1. Models RP-519, CT-356, CTR-6B and some RAP-89 use 2meg tone 1meg volume (Part #80A1020)
Models DX-619, DAP-39 use 2meg tone 1meg volume (Part #80A1100)
Models BP-679, BAP-9 use 2meg tone 1meg volume (Part #80A1140)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	1.2meg	
R4	47K	
R5	47K	

ITEM No.	RATING	REMARKS
R6	100K	
R7	220Ω	
R8	22Ω	

ITEM No.	RATING	REMARKS
R9	1Ω 1W	
R10	150Ω	(330Ω) *

*Alternate Value

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AUTOMATIC PART No.	REPLACEMENT DATA		
K1	Antenna Filter	100mmf, 1.2meg	89-4204	Sprague	PRC-9	
K2	RF and Conv. Coupling	3000mmf, 5000mmf, .047mfd, 1500Ω, 150K, 2.2meg, 4.7meg, 10meg, 10meg	89-591	Sprague	DT-591	Note 1
K3	Audio Coupling	10000mmf, 120Ω, 6800Ω, 12K, 470K, 2.2meg	89-592	Sprague	F-3	Note 1

Note 1. Some versions may use individual components in this application.

COILS (RF-IF)

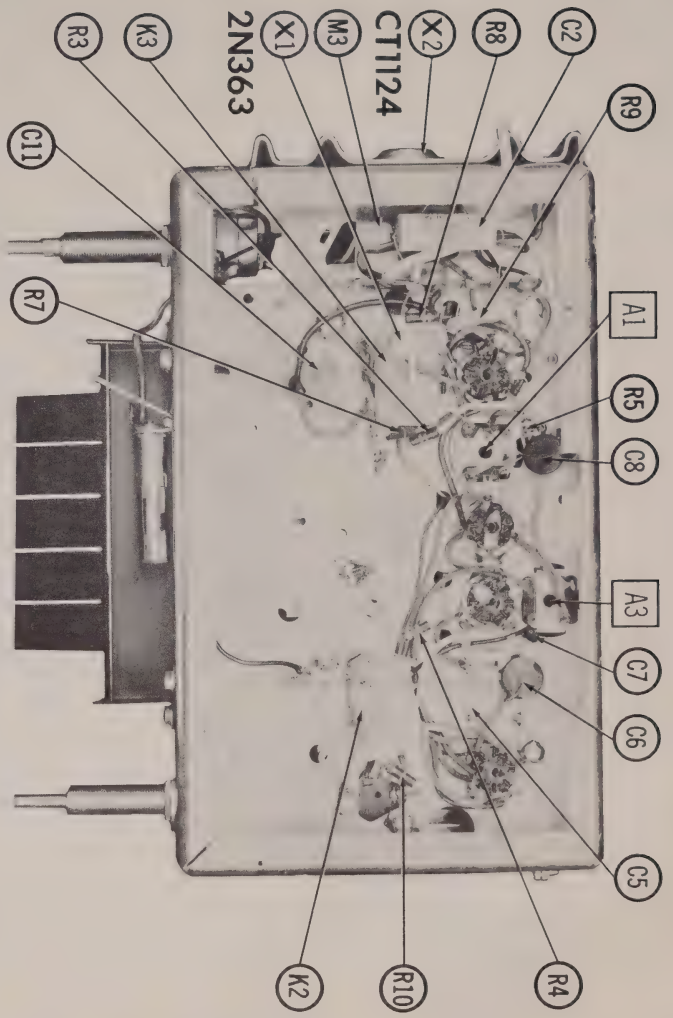
ITEM No.	USE	REPLACEMENT DATA						NOTES
		AUTOMATIC PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Ant Coil							
L2	RF Coil							
L3	Osc Coil							
L4	Input IF Trans	14-265X ①	16-6752	16-6752	BC-350	12-H1	RF-3	
L5	Output IF Trans	14-267X ①	16-6754	16-6754	BC-354	12-H6		

① Part #14-1655-6/X used in manual tuning models.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L6	1.1A	.9Ω	.008Hy	75A601						

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	13	1	75A1303 ①						

① Part #75A702C used in models DX-619, DAP-39, BP-679, BAP-9

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	20Ω tap ② 3-4Ω		75A1306 ①							

① Part #75A966 used in models DX-619, DAP-39, BP-679, BAP-9

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	AUTOMATIC PART No.	QUAM PART No.	
SP1	5"x7"	PM	3-4Ω	73B654	57A21	Models RAP-89, RP-519
	6"x9"	PM	3-4Ω	73-902	69A3	Models CT-356, CTR-6B
	5"x7"	PM	3-4Ω	73-656		Models DX-619, DAP-39
	5"x7"	PM	3-4Ω	73B654X		Models BP-679, BAP-9

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			AUTOMATIC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	SFE	7½A 32V			307007.5 (SFE 7½ 32V)	155009	SFE 7½	HHH

MISCELLANEOUS

ITEM No.	PART NAME	AUTOMATIC PART No.	NOTES
M2	Tuner	78-315	Pushbutton, Model RAP-89, RP-519
	Tuner	78-315 (or)	Pushbutton Model CT-356, CTR-6B
	Tuner	78-316	Pushbutton Model CT-356, CTR-6B
	Tuner	78-325 mod	Manual, Model CT-356, CTR-6B
	Tuner	78B1107	Pushbutton Model DX-619, DAP-39
	Tuner	78B1152	Pushbutton Model BP-679, BAP-9
M3	Spark Plate		

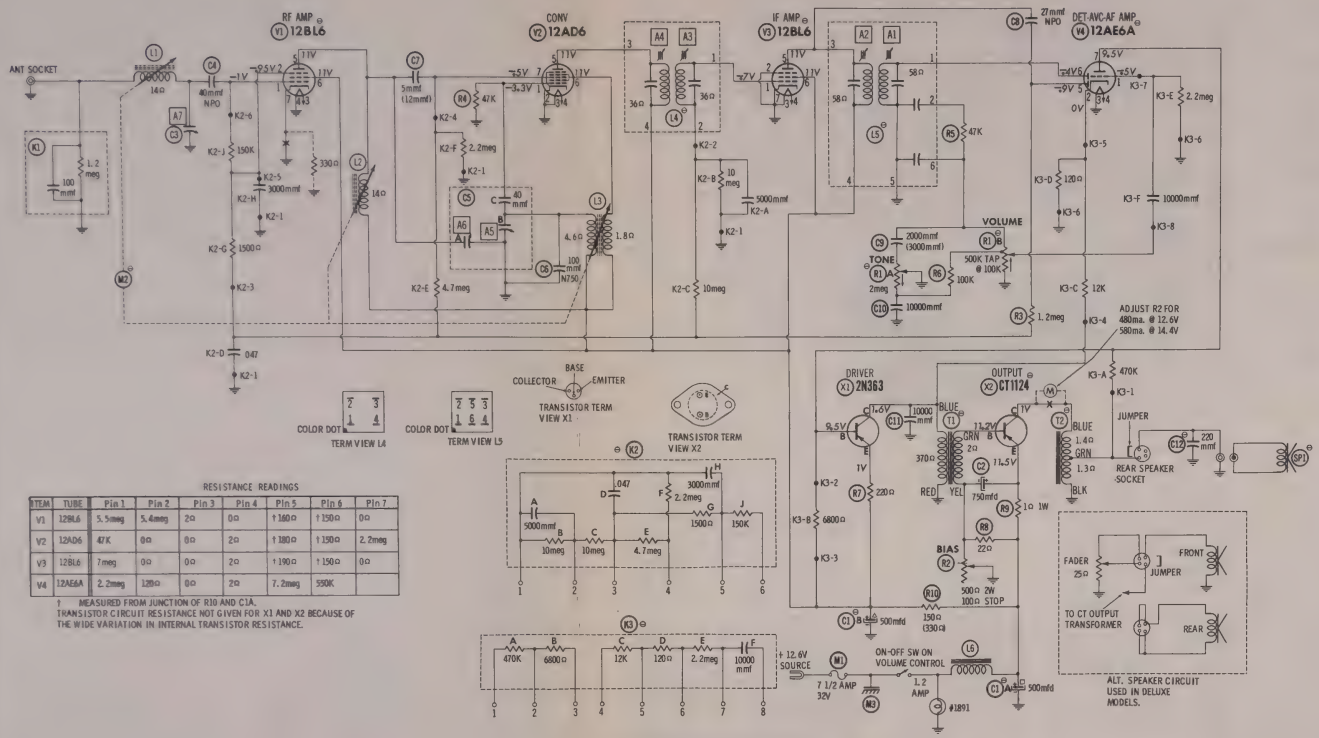
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	48A646	Tuning, Volume, Model RAP-89, RP-519, CTR-6B, CT-356
Knob	48A1037	Tuning, Volume, Model BP-679, BAP-9
Knob	48A1012	Tuning, Tone Model DX-619, DAP-39
Knob	48A648	Tone, Model CTR-6B, CT-356, RAP-89, RP-519
Knob	48A1013	Tone and Fader, Model DX-619, DAP-39
Knob	48A1038	Tone and Dummy Model BP-679, BAP-9
Knob	48A648-1	Dummy, Model CTR-6B, RAP-89, RP-519, CT-356

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire ..... Use BELDEN No. 8885
Bonding Strap ..... Use BELDEN No. 8661



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BL6	5.5meg	5.4meg	2Ω	0Ω	†160Ω	†150Ω	0Ω
V2	12AD6	47K	0Ω	0Ω	2Ω	†180Ω	†150Ω	2.2meg
V3	12BL6	7meg	0Ω	0Ω	2Ω	†190Ω	†150Ω	0Ω
V4	12AE6A	2.2meg	128Ω	0Ω	2Ω	7.2meg	550K	

† MEASURED FROM JUNCTION OF R10 AND C1A.
TRANSISTOR CIRCUIT RESISTANCE NOT GIVEN FOR X1 AND X2 BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

ALT. SPEAKER CIRCUIT USED IN DELUXE MODELS.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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AUTOMATIC MODELS BAP-9, BP-679, CT-356, CTR-6B, DAP-39, DX-619, RAP-89, RP-519

PHOTOFACT® Folder

**BOGEN MODEL
BT25**

BOGEN MODEL
BT25

BOGEN MODEL
BT25

TRADE NAME	Bogen Model BT25
MANUFACTURER	Bogen-Presto Co., A Div. of The Siegler Corp., P.O. Box 500, Paramus, N. J.
TYPE SET	Battery Operated Transistorized Mobile Audio Amplifier
POWER SUPPLY	6 (or) 12 Volt Storage Battery RATING .12 Amp. @ 6.3 Volts DC or .28 Amp. @ 12.6 Volts DC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N467	1st AF Amplifier		2N408	2N467		PNP
X2	2N466	2nd AF Amplifier		2N408	2N466		PNP
X3	2N669 *	Driver		2N301			PNP
X4	2N669	Output					PNP
X5	2N669	Output					PNP

* When replacing, install insulating spacer same as original.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	BOGEN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	100	25	79-003-050	PWE25100	BBR100-25	TC2501	ML100-25	TE-1211	
C2	25	15	79-003-040	PWE25025	BBR25-25	TT25X25	TD-25-25	TE-1157.1	
C3	2	20	79-003-045	PWE25002	NLW2-50	TC302	ML2-25	TE-1201	
C4	25	1	79-003-001	PWE3025	EC25-3	TT3X25	ML25-3	TE-1055	
C5	2	10	79-003-030	PWE10002	NLW2-50	TT12X2	ML2-15	TE-1121	
C6	100	3	79-003-010	PWE3100	EC100-6	TT6X100	ML100-3	TE-1059.5	
C7	200	5	79-003-020	PWE6200	NLW200-12	TC1502	TD-250-6	TE-1104	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	100000 50V			DDA-104	CUB2P1	IDP-2-104	TA-010	5HK-P10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BOGEN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	5000Ω	½	77-001-469	B-11	A47-500-S	Q13-114	U12	Volume, Mic
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	1meg	½	77-001-470	B-70	A47-1meg-Z	Q13-137	U53	Volume, Aux.
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

RESISTORS

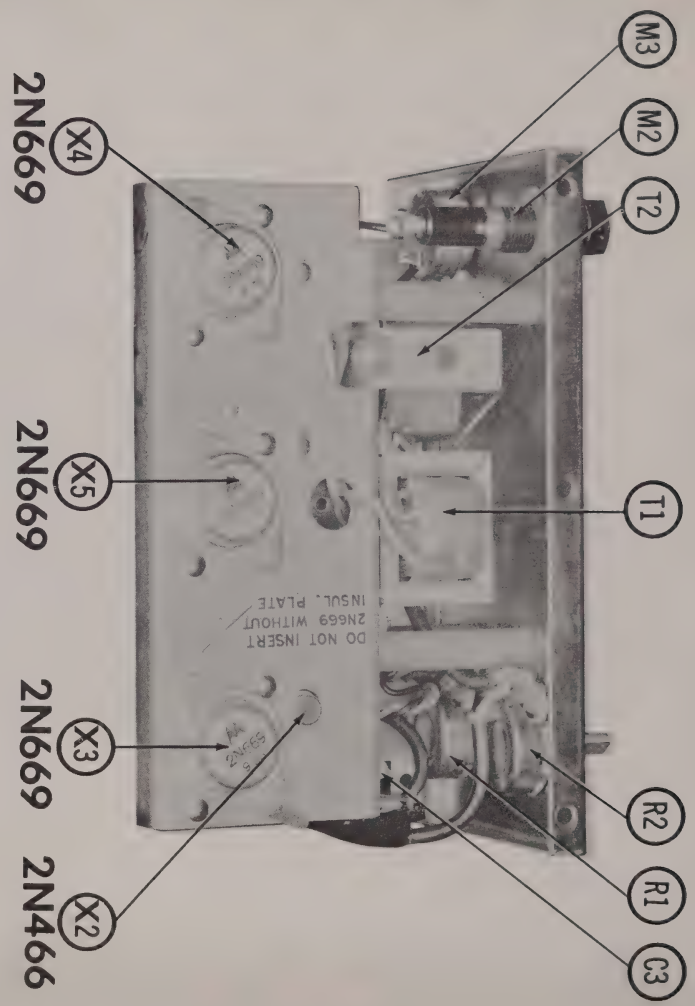
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	39K	
R4	2200Ω	
R5	1000Ω	
R6	12K	
R7	27K	
R8	10K	

ITEM No.	RATING	REMARKS
R9	470Ω	
R10	750Ω	
R11	330Ω	
R12	150Ω 1W	
R13	330Ω 2W	
R14	33Ω 2W	

ITEM No.	RATING	REMARKS
R15	330Ω 2W	
R16	33Ω 2W	
R17	220Ω	
R18	1000Ω	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	BOGEN PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1	1 SEC. 2 1	83-296-000						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA							NOTES
	PRI.	BOGEN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	16Ω Taps @ 8Ω, 4Ω	83-913-000							

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BOGEN PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	5A 125V S/B			313005 (3AG 5A 125V S/B)	357001	MDX5	4405
M2	3AG	3A 125V S/B			313003 (3AG 3A 125V S/B)	342001	MDX3	HKP

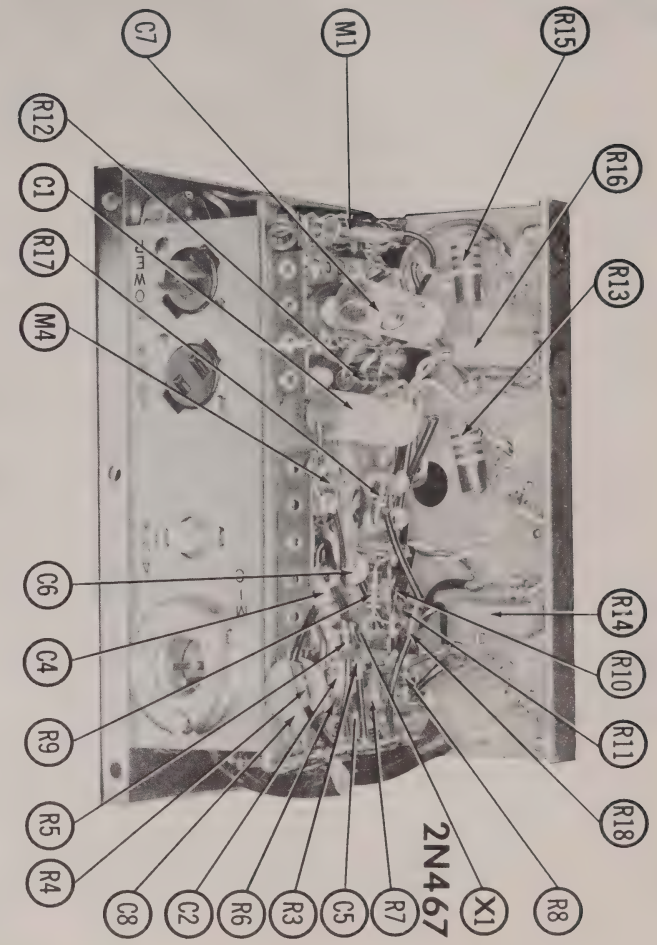
MISCELLANEOUS

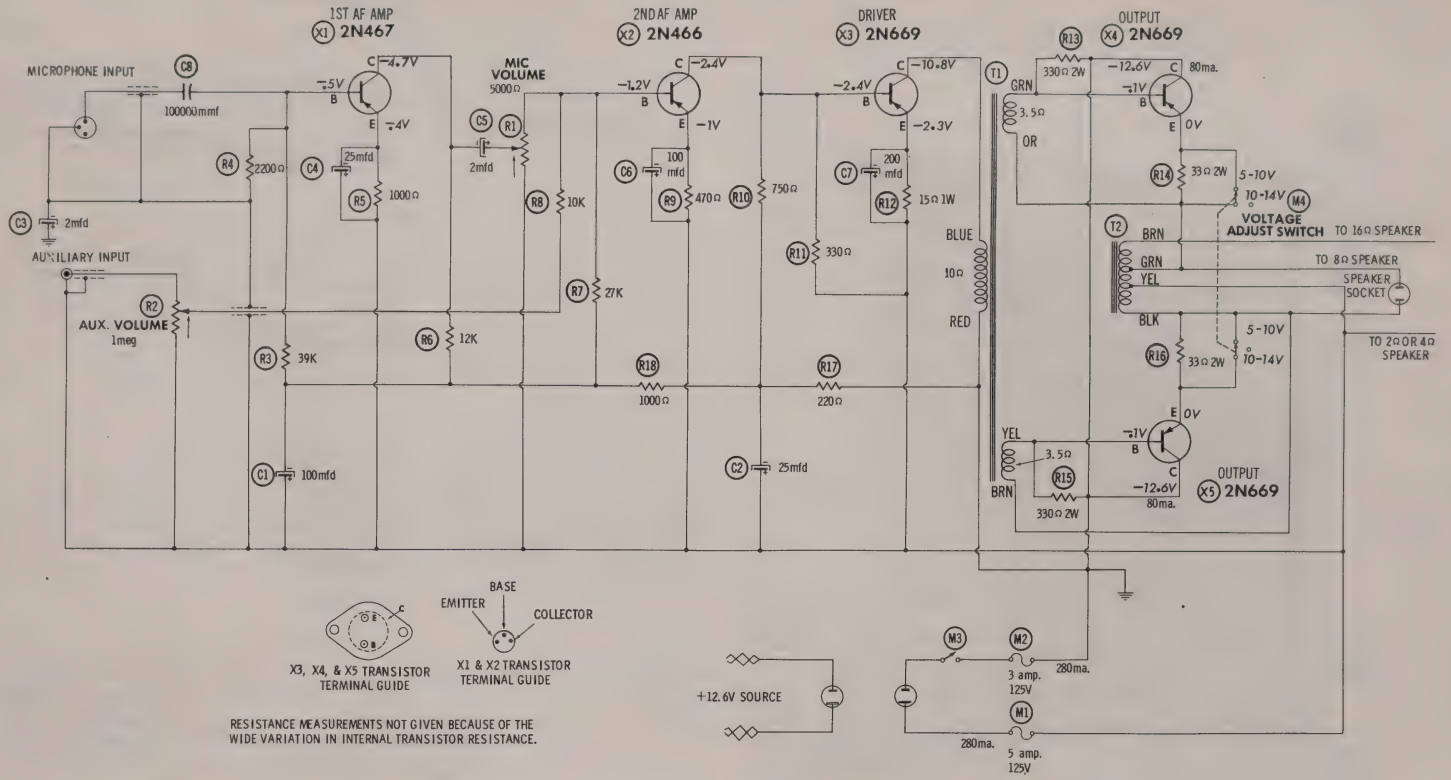
ITEM No.	PART NAME	BOGEN PART No.	NOTES
M3	Switch	81-006-003	Off-On
M4	Switch	81-006-002	Voltage Adjust

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire	Use BELDEN No. 8885
Bonding Strap	Use BELDEN No. 8661

CHASSIS—BOTTOM VIEW





ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes posssible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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BOGEN MODEL BT25

PHOTOFACT® Folder

CAPITOL MODEL 926

CAPITOL MODEL 926

CAPITOL MODEL 926

TRADE NAME	Capitol Model 926
MANUFACTURER	Capitol Records, Inc., 1 S. Webster Ave., Scranton 5, Pa.
TYPE SET	AC Operated 3 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 30 Watts, .31 Amp. @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER — SEE SIMILAR MONARCH UA8 — PHOTOFACT SET 381 FOLDER 11

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JT896

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	Left Channel AF Amp. - Right Channel AF Amp.	12AX7
V2	Left Channel Output	50EH5
V3	Right Channel Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CAPITOL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	165-001	AFH4-93-50	BBRT42215	TCT3119	TDLT-3	TVL-3443	
B	40	150			BR6015	TC45	TD-80-150	TVA-1410	
C	20	150							
D	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S5
C3	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	#GP110	5HK-S10
C5	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C7	220		DI-220	DD-221	L10T22	CCD-221	GP221	10TS-T22
C8	.5 200V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P5
C9	.5 200V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P5
C10	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S5

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CAPITOL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3meg	½	133-800	B-85			FC36A	Loudness, Right Channel
B	3meg	½		SR-85			RU36A	Loudness, Left Channel
C	Shaft			Not Req.			CS3500	
R2A	100K	½	133-475	B-41			FA15A	Tone, Left Channel
B	100K	½		SR-41			RU15A	Tone, Right Channel
C	Shaft			Not Req.			CS3500	
R3A	500Ω	½	132-050	B-4	A47-500-S	Q11-103	U2	Balance
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

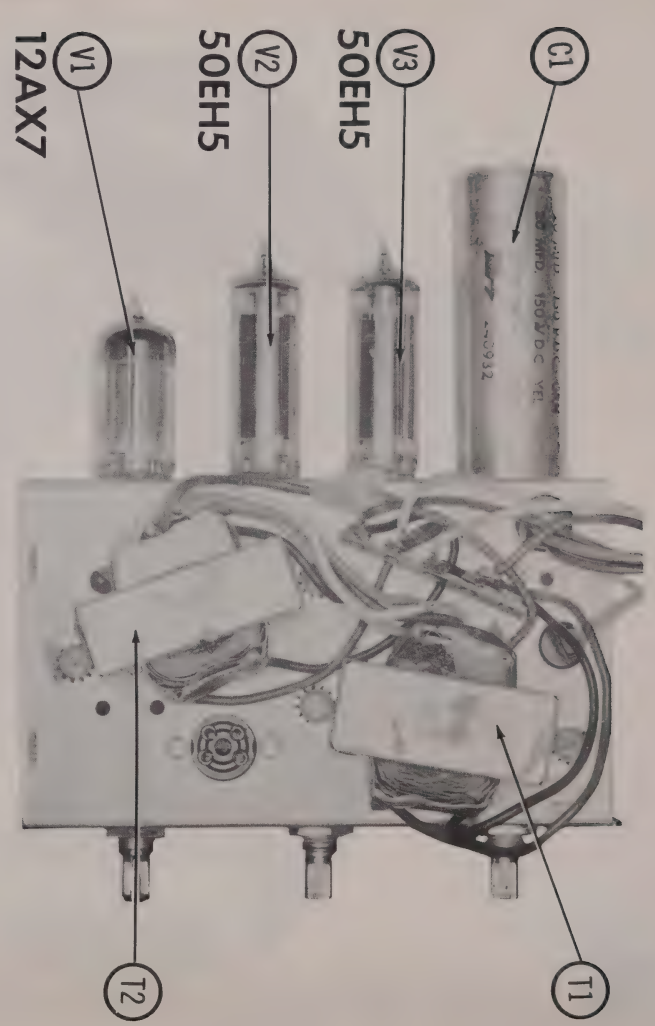
ITEM No.	RATING	REMARKS
R4	1meg	
R5	1meg	
R6	6.8meg	
R7	470Ω	
R8	27Ω 1W	
R9	6.8meg	

ITEM No.	RATING	REMARKS
R10	470Ω	
R11	2200Ω	
R12	100Ω 5W	#122-170
R13	47Ω	#129-470
R14	47Ω 2W	#119-147
R15	270Ω	

ITEM No.	RATING	REMARKS
R16	100Ω 1W	
R17	100Ω 1W	
R18	1500Ω	
R19	1500Ω	

Capitol Part Number.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CAPITOL PART No.	REPLACEMENT DATA	
K1	Audio Coupling	270mmf, 10000mmf, 270K, 470K	195-001	Aerovox Centralab Cornell-Dubilier Sprague	PA-112-A PC-81 113TM2 T-2
K2	Audio Coupling	270mmf, 10000mmf, 270K, 470K	195-001	Aerovox Centralab Cornell-Dubilier Sprague	PA-112-A PC-81 113TM2 T-2

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CAPITOL PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	4300Ω CT	1700Ω CT	210-001							
		SEC. 2								
		3-4Ω								
	PRI.	SEC. 1								
T2	2400Ω	285Ω	205-002							
		SEC. 2								
		3-4Ω								

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CAPITOL PART No.	QUAM PART No.	
SP1	6"	PM	3-4Ω	229-004	6A21	
SP2	3½"	PM	3-4Ω	229-005	3A15T	
SP3	6"	PM	3-4Ω	229-004	6A21	
SP4	3½"	PM	3-4Ω	229-005	3A15T	

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					
	CURRENT (Measured)	CAPITOL PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.080A	250-001 *	2E4 *	HA154 *	K200 *	SR200 *	* Silocon Type

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								
	CAPITOL PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M2	106 *	76TS-TB		96					

* 105 may be used in some versions.

PHONO NEEDLE

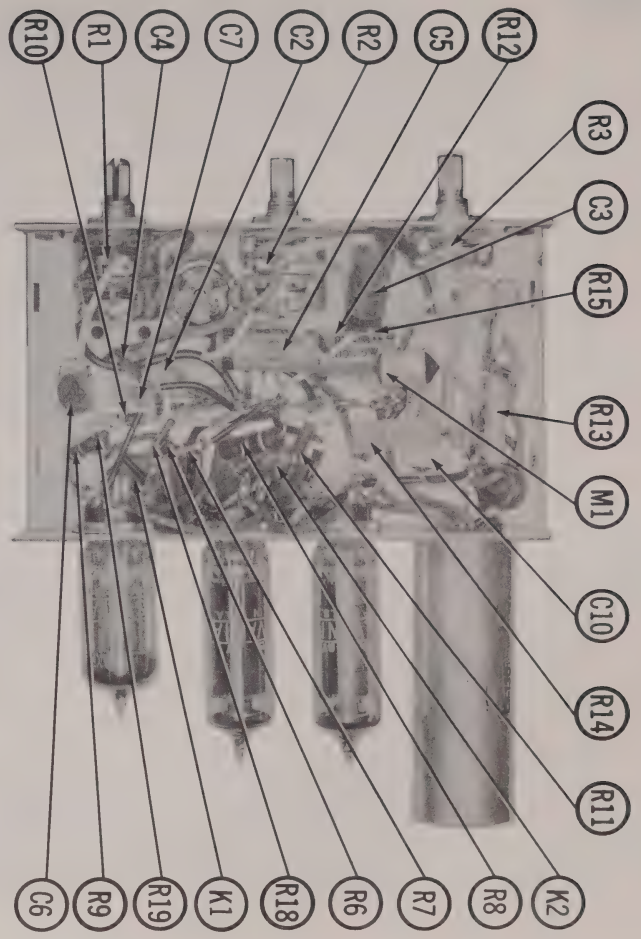
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

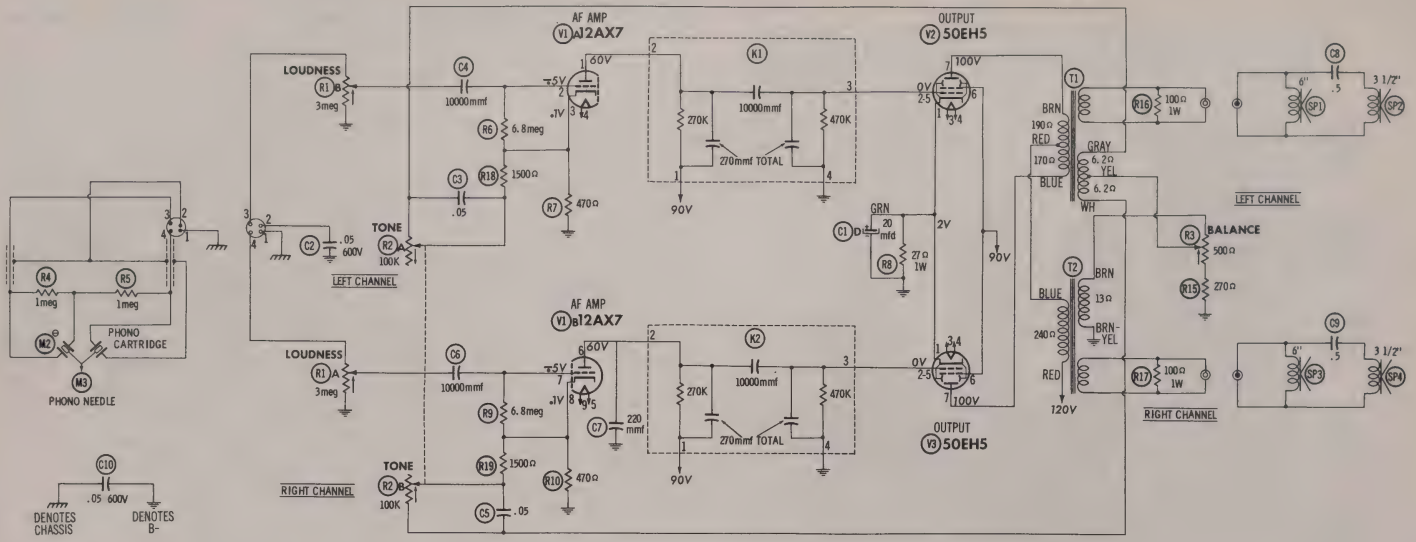
ITEM No.	REPLACEMENT DATA			REMARKS
	CAPITOL PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M3	SA-075 † (LP)		CRA-57X † or CRA-57XD †♦	† Jewel ♦ Diamond
	SA-250 † (78 RPM)		CRA-57 † or CRA-57D ♦	

MISCELLANEOUS

ITEM No.	PART NAME	CAPITOL PART No.	NOTES
M4	Motor Switch	8M59	Phono Drive Off-On (Part of Changer)

CHASSIS—BOTTOM VIEW

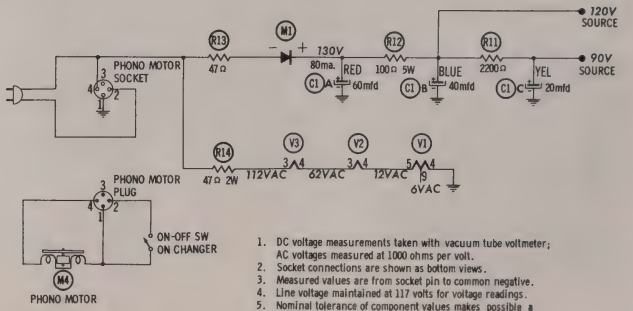




RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†270K	6.8meg	470Ω	0Ω	12Ω	†270K	10K	470Ω	6Ω
V2	50EH5	27Ω	470K	62Ω	12Ω	470K	†2300Ω	†530Ω		
V3	50EH5	27Ω	470K	112Ω	62Ω	470K	†2300Ω	†510Ω		

† MEASURED FROM OUTPUT OF M1.



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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CAPITOL
MODEL 926

PHOTOFACT® Folder

CORONADO MODELS
PH3-4045A, PH3-4055A

CORONADO MODELS
PH3-4045A, PH3-4055A

MODEL PH3-4054A

CORONADO MODELS
PH3-4045A, PH3-4055A

TRADE NAME	Coronado Models PH3-4054A, PH3-4055A
SUPPLIER	Gamble-Skogmo, Inc., 15 N. Eighth Street, Minneapolis 3, Minn.
TYPE SET	AC Operated 5 Tube Stereo Amplifier with 4 Speed Automatic Record Changer
POWER SUPPLY	105-125 Volts AC, 60 Cycles RATING 77 Watts, .84 Amp @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER PART #28A247 - SEE V-M 1201 - PHOTOFACT SET 436 FOLDER 18

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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JT793

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Left Channel AF Amp	7025	V4	Right Channel Output	6BQ5
V2	Left Channel Output	6BQ5	V5	Rectifier	5Y3GT
V3	Right Channel AF Amp	7025			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	400	45X462	AFH4-86-20	C1104	FP431.7		TVL-3755	
B	■40	400			BR4045	TC79		TVA-1714	
C	▲40	400							
D	100	25							
C2	5	10NP	45X426	PRS7405	BBR10-50†	TCN105		TVANS-1110*	
C3	5	10NP	45X426	PRS7405	BBR10-50†	TCN105		TVANS-1110*	

†Use 2 units. Connect negative terminals together.
Connect positive terminals into circuit the same as the original non-polarized unit.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	47	10%		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C5	10000			BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C6	.0047	200V		P288N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C7	.1	400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C8A	4700			BPD-2X0047	DD3-503	BYC6DD47	CCD-472	B2X250	5HK-2D47
B	4700						CCD-472 *		
C9	100	N150	#80X8						
C10	.047	400V		P488N-047	DD-503	CUB6S47	4DP-3-503	GEM-4147	4TM-S47
C11	47	10%		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C12	10000			BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C13	.0047	200V		P288N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C14	1.0	100V		P288N-1.0		CUB2W1		GEM-21	2TM-M1
C15	.1	400V		P288N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	GEM-401
C16A	4700			BPD-2X0047	DD3-502	BYC6DD47	CCD-472	B2X250	5HK2D47
B	4700						CCD-472 *		
C17	100	N150	*80X8						
C18	.047	400V		P488N-047	DD-503	CUB4S47	4DP-3-503	GEM-4147	4TM-S47

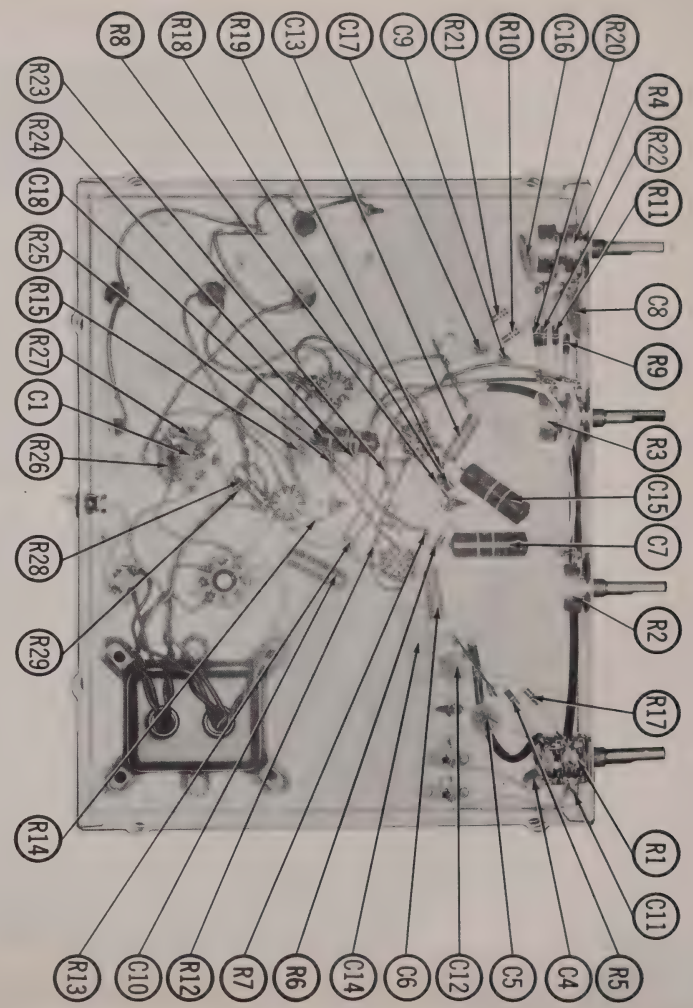
#Coronado Part Number
*Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg	½	36X426	BT-167				Level, Right Channel
	200K tap							
B	2 meg	½		STR-167 *				Level, Left Channel
	200K tap							
R2A	500K	½	36X427	B-59	A47-500K-S	Q11-133	U50	Balance
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R3A	500K	½	40X479	B-59	AD47-500K-S		FA55L	Treble, Left Channel
B	500K	½		SR-59	Not Req.		RU55L	Treble, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	
R4A	1meg	½	40X480	B-69	AD47-1meg-S		FA16L	Bass, Left Channel
B	1meg	½		SR-69	Not Req.		RU16L	Bass, Right Channel
C	Shaft			Not Req.	FS-3		CS3500	

* Do Not Use Tap #2

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	18K	
R6	1meg	
R7	100K	
R8	1000Ω	
R9	100K	
R10	470K	
R11	100K	
R12	100K	
R13	2200Ω	
R14	1meg	
R15	130Ω 5W	#43X396
R16	220Ω	
R17	18K	
R18	1meg	
R19	100K	
R20	100K	
R21	470K	
R22	100K	
R23	100K	
R24	2200Ω	
R25	1meg	
R26	820Ω 2W	#43X347
R27	10K 2W	#43X346
R28	100Ω	
R29	68Ω	

#Coronado Part Number

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	CORONADO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ② .84A	620VCT ② .085A	5V ② 2A	53X388	22R04				22R04	
	SEC. 3	SEC. 4	SEC. 5							
	6.3V ② 2.1A									

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CORONADO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	9600Ω CT	16Ω CT	51X219							
T3	2300Ω	6-8Ω	51X218							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CORONADO PART No.	QUAM PART No.	
SP1	8"	PM	6-8Ω	12A570	8A31Z7.9	
SP2	3½"	PM	3-4Ω	12A571	3A15T	
SP3	8"	PM	6-8Ω	12A570	8A31Z7.9	
SP4	3½"	PM	3-4Ω	12A571	3A15T	

PHONO CARTRIDGE

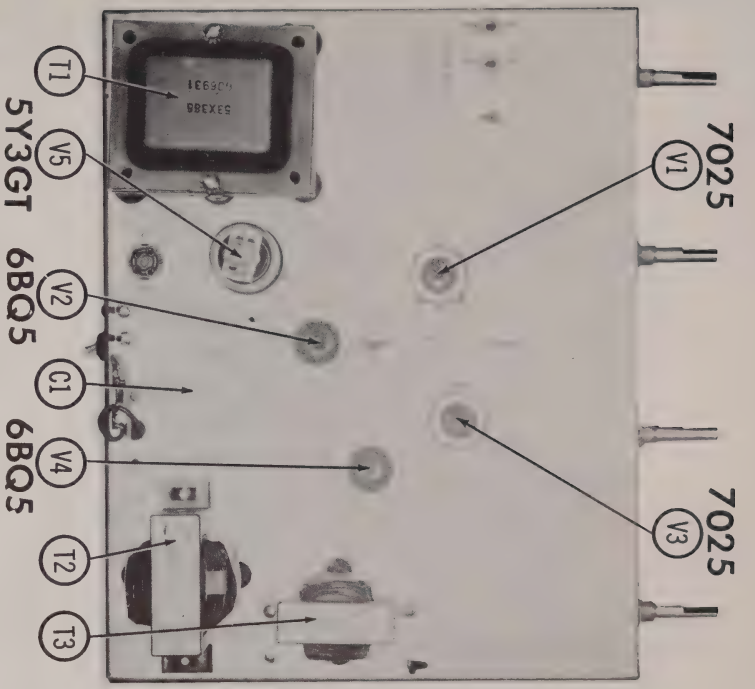
ITEM No.	REPLACEMENT DATA							
	CORONADO PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1		13T		13		A-44X		10T2-S	

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	CORONADO PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M2		*W-204DS †♦ or *W-204DD-1 ♦	*A-44X † or *A-44XSD †♦ or *A-44XDD ♦	† Jewel ♦ Diamond * Includes Cartridge

CHASSIS—TOP VIEW



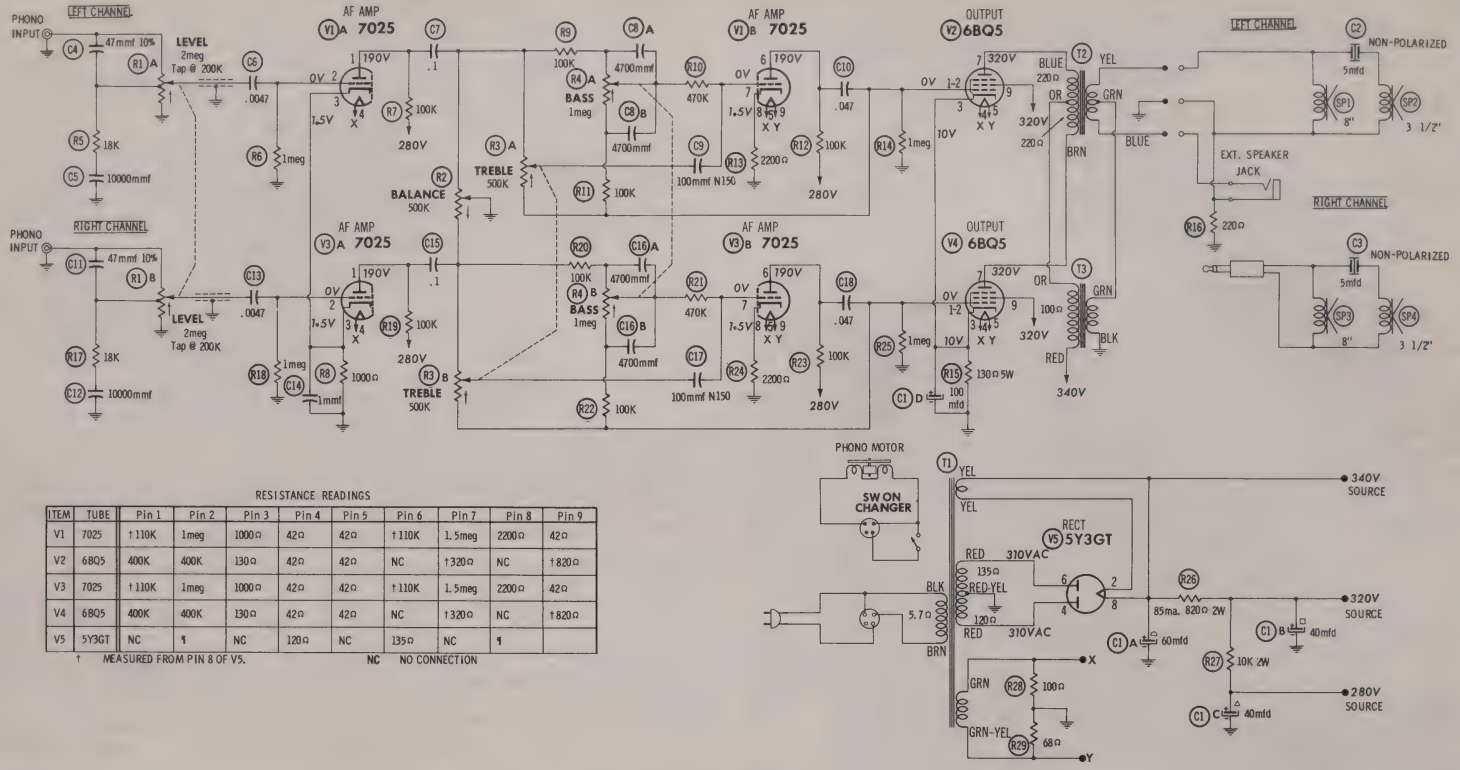
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	10A995-2	Level, Bass, Treble
Knob	10A995-1	Balance
Cabinet Leg	81X31-4	Mahogany
Cabinet Leg	81X31-5	Oak

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	7025	†110K	1meg	1000Ω	42Ω	42Ω	†110K	1.5meg	2200Ω	42Ω
V2	6BQ5	400K	400K	130Ω	42Ω	42Ω	NC	†320Ω	NC	†820Ω
V3	7025	†110K	1meg	1000Ω	42Ω	42Ω	†110K	1.5meg	2200Ω	42Ω
V4	6BQ5	400K	400K	130Ω	42Ω	42Ω	NC	†320Ω	NC	†820Ω
V5	5Y3GT	NC	¶	NC	120Ω	NC	135Ω	NC	¶	

† MEASURED FROM PIN 8 OF V5. NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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CORONADO MODELS
PH3-4045A, PH3-4055A

PHOTOFACT® Folder

**CORONADO MODELS
RA50-8211A, RA50-8212B**

CORONADO MODELS
RA50-8211A, RA50-8212B

MODEL RA50-8211A

CORONADO MODELS
RA50-8211A, RA50-8212B

TRADE NAME	Coronado Models RA50-8211A, RA50-8212B
SUPPLIER	Gamble-Skogmo, Inc., 15 N. Eighth Street, Minneapolis 3, Minn.
TYPE SET	AC-DC Operated 5 Tube AM Receiver
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE-BROADCAST 535 - 1640 KC	RATING 26 Watts, .25 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1 thru A4. . . . . GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6. . . . . GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	High side thru .05 mfd to antenna stator lug of tuning gang. Low side to chassis.	455KC (400~ mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output
2	Loop	1640KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3	"	1400KC	Tune to 1400KC signal	"	A6	Adjust for maximum output while rocking tuning gang

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JG813

PARTS LIST AND DESCRIPTIONS

TUBES

• CBS • GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V4	Output	50C5
V2	IF Amplifier	12BA6	V5	Rectifier	35W4
V3	Det - AVC - AF Amp	12AV6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	E3214	PRS2200	BBRD5315	TCD497	TDLD-8	TVA-2450	
B	30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C3	.01 400V 10%		V84C4S1-10%		PM4S1	4DP-1-103	GEM-1611	4TM-S1
C4	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C5	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	E2518	B-60-S	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	22K	
R3	150Ω	

ITEM No.	RATING	REMARKS
R4	3.3meg	
R5	150Ω	

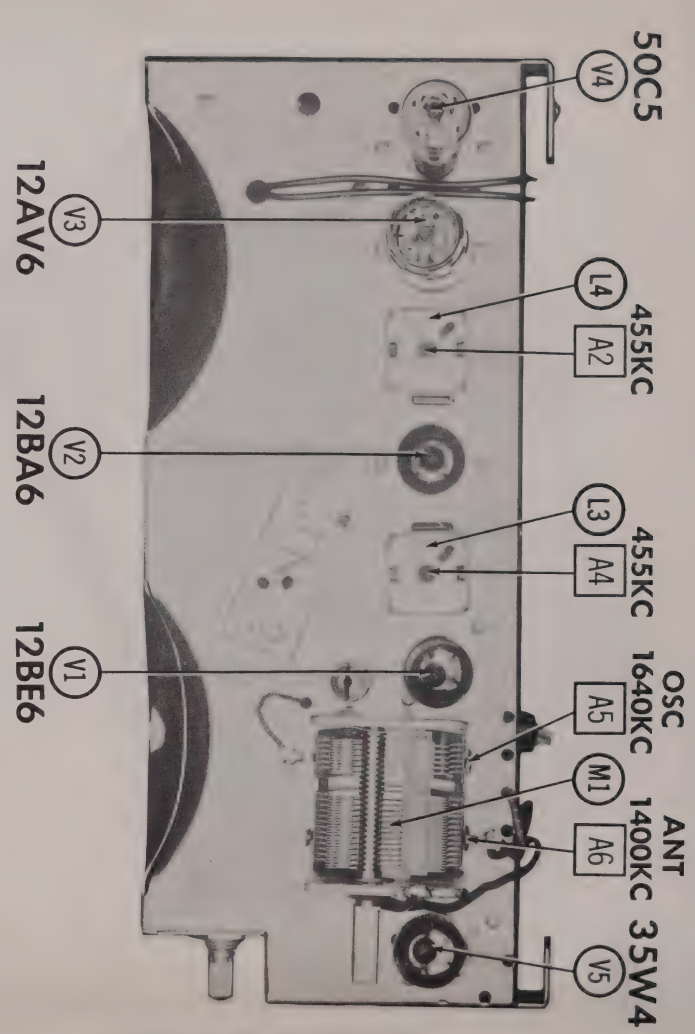
ITEM No.	RATING	REMARKS
R6	1500Ω 1W	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA CORONADO PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Loop Ant	E6016						
L2	Osc Coil	E6127	14-1073	14-1073	BC-393 †	69-OSC †		
L3	Input IF Trans	E6256	16-6758	16-6758	BC-352	12-C1	RF-1	
L4	Output IF Trans	E6256	16-6758	16-6758	BC-352	12-C1	RF-1	

† Enlarge Mounting Hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CORONADO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	E1113	26S58 ①	A-3025		A-3332	26S58 ①	S-12X	

① Drill New Mounting Hole

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CORONADO PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	E1014	4A1	*Alternate
	4"	PM	3-4Ω	E1017 *		

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA	
K1	Audio Coupling	220mmf, 250mmf 2000mmf, 5000mmf, 470K 470K, 6.8meg	E3015	Aerovox Centralab Cornell-Dubilier Mallory Sprague	PA-113-1 PC-150 116TM1 MS-106 DT-1

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M1	Tuning Cap	E3518	2 Gang: ANT 19-380mmf, Osc. 17-125mmf

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

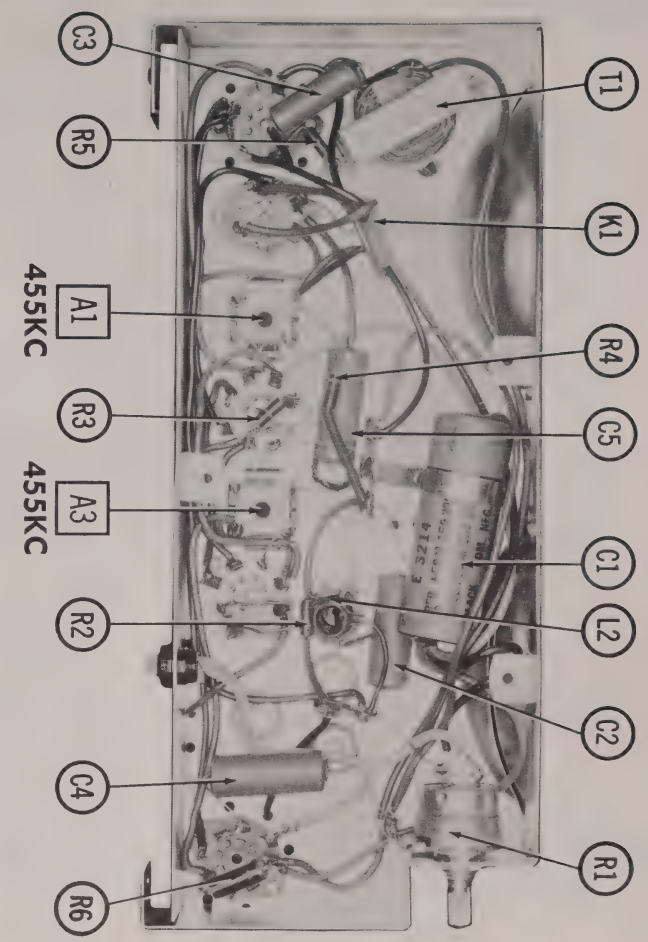
NAME	PART NO.	DESCRIPTION
Knob	E5059	Tuning (Specify Color)
Knob	E5061	Volume (Specify Color)
Cabinet	E7043S	(Specify Color)

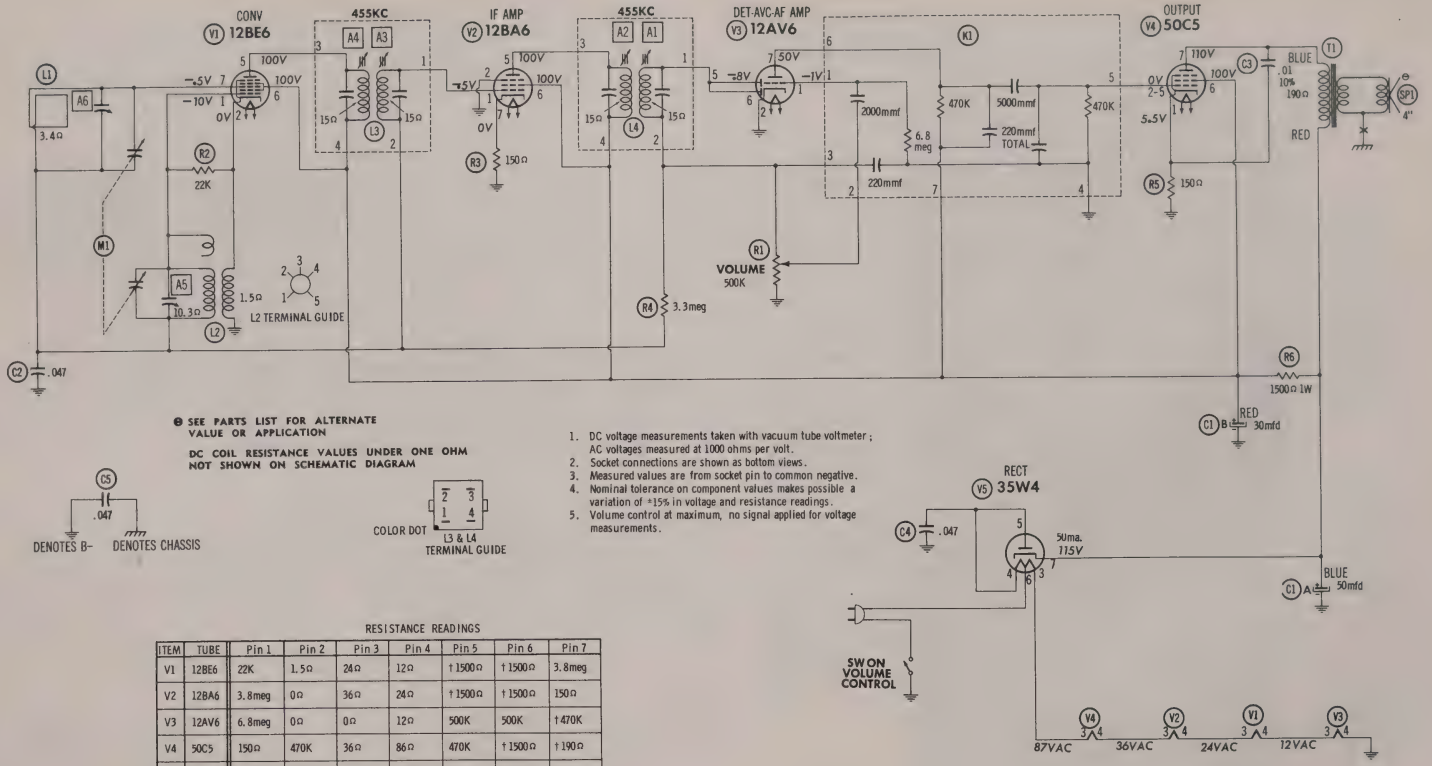
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

CHASSIS—BOTTOM VIEW





❸ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

C5 .047

DENOTES B- DENOTES CHASSIS

COLOR DOT

L3 & L4 TERMINAL GUIDE

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1.5Ω	24Ω	12Ω	†1500Ω	†1500Ω	3.8meg
V2	12BA6	3.8meg	0Ω	36Ω	24Ω	†1500Ω	†1500Ω	150Ω
V3	12AV6	6.8meg	0Ω	0Ω	12Ω	500K	500K	†470K
V4	50C5	150Ω	470K	36Ω	86Ω	470K	†1500Ω	†190Ω
V5	35W4	NC	TP	86Ω	120Ω	120Ω	110Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION TP TIE POINT

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

PHOTOFACT STANDARD NOTATION SCHEMATIC

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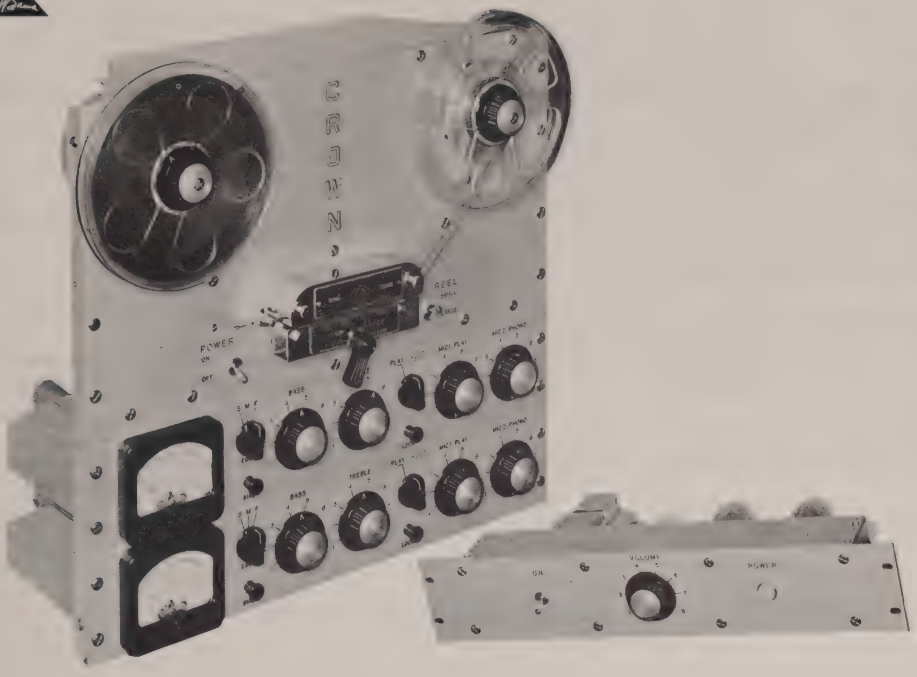
CORONADO MODELS
RA50-8211A, RA50-8212B

PHOTOFACT® Folder

CROWN MODEL
GOLD CROWN Series

CROWN MODEL
GOLD CROWN Series



CROWN MODEL
GOLD CROWN Series

GENERAL INFORMATION

Gold Crown 700 Series three-speed tape recorders are all basically alike except for their amplifiers and head assemblies.

The tape transport is on an aluminum plate that can be mounted on a rack or in a carrying case. All mechanical functions — plus the power supply is contained on the tape transport.

The amplifiers contain all the elements for supplying the erase and record heads with power and for amplifying the signal from the playback head. The output is of the cathode-follower type.

The tape transport accommodates all reel sizes up to and including the standard NARTB 10 1/2-inch reels except for the GCLPT transport which has provisions for 14-inch reels. Speeds of 15, 7 1/2, and 3 3/4 ips — with correction of equalization — can be selected by moving the belt on the drive motor pulley from one groove to the other.

These recorders operate from a 110-120 volt, 60-cycle AC power source only. Any other power source could ruin the recorder.

Manufactured by:

"Crown" International
Subsidiary of International Radio and Electronic Corp.
Box 261
Elkhart, Indiana

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ425

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GOLD CROWN SERIES

GOLD CROWN BROADCASTER - Model 701
GCT - Gold Crown Transport
FTH - Full-Track Head Assembly
RPA - Record-Play Amplifier

GOLD CROWN IMPERIAL - Model 702/A15
GCT - Gold Crown Transport
HTH - Half-Track Head Assembly
RPA - Record-Play Amplifier
15A - Outboard Power Amplifier

GOLD CROWN PRINCE - Model 702
GCT - Gold Crown Transport
HTH - Half-Track Head Assembly
RPA - Record-Play Amplifier

GOLD CROWN ROYAL - Model 712/A3030
GCSX - Gold Crown Stereo X
SXA* - Double 30 Watt Output Amplifier *

GOLD CROWN PRINCE STEREO - Model 702C
GCT - Gold Crown Transport
RPHP2 - Half-Track Head
RPA - Record-Play Amplifier
MPP - Monaural Play Preamp.

GOLD CROWN STEREO PLAYER - Model 754C
GCT - Gold Crown Transport
C4TSH - Four-Track Play Head
SPP - Stereo Player Preamp.

GOLD CROWN STEREO X - Model 712
GCT - Gold Crown Transport
PSH - Professional Two-Track Stereo Head
RPA - Record-Play Amplifier (2 Required)

GOLD CROWN VANGUARD - Model 714C
GCLPT - Gold Crown Long Play Transport
PSH - Professional Two-Track Stereo Head
RPA - Record-Play Amplifier (2 Required)

* FOR SERVICE INFORMATION ON MODEL SXA, SEE FOLDER 11 IN THIS PHOTOFACT SET.

FUNCTION OF TAPE TRANSPORT CONTROLS AND SWITCHES

On-Off

Push this switch up to turn the power on, down to turn it off.

Reel

Controls the take-up tension of the tape. In the Large position, the take-up motor has more torque; in the Small position, less torque.

Operational

Selects the Play-Record, Stop, Forward, Thread-Idle, or Rewind modes.

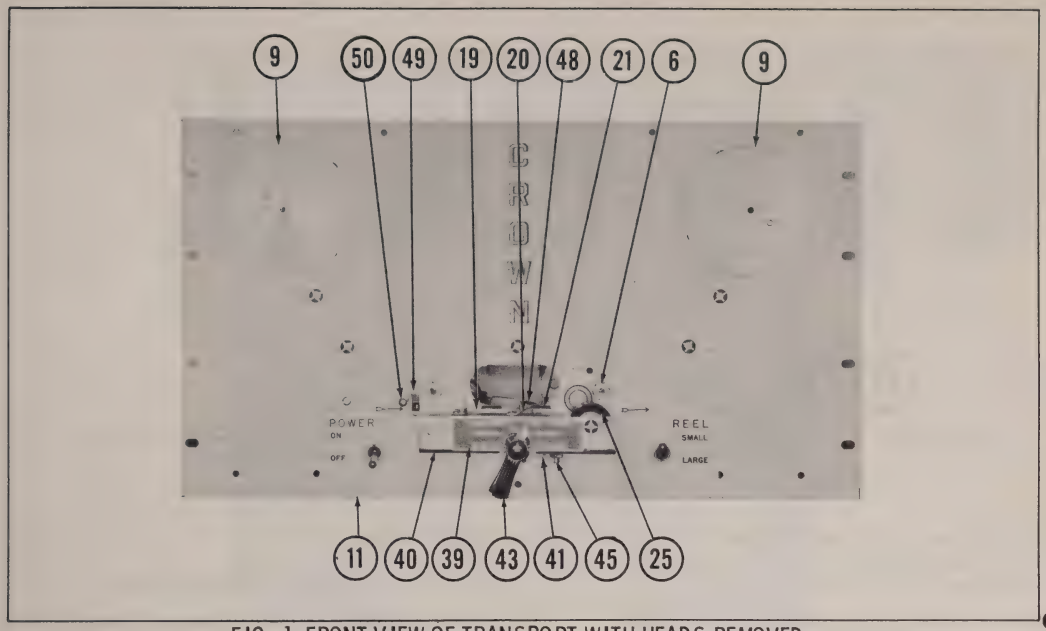


FIG. 1 FRONT VIEW OF TRANSPORT WITH HEADS REMOVED

AMPLIFIER CONTROLS AND INDICATORS

VU Meter

Indicate the output from the cathode output jack during playback.

Indicate the record level during a recording.

Equal

Adjusts equalization for different recorder speeds — S for 3-3/4, M for 7-1/2, and F for 15 ips.

Bias

When the recorder is in Record and this button is depressed, the amount of bias current through the record head is shown on the VU Meter.

Bass

Boosts the low frequencies.

Treble

Boosts the high frequencies.

Play-Record

Switches the head circuit from Play to Record. Fast forward and rewind will not operate while this control is in Record because they are interlocked with the control.

Lock

Prevents accidental erasure. The lock must be depressed before the Play-Record control can be turned.

Mic 1 Play

Regulates the volume during playback, and the record level during record. The jack marked Mic 1 (on the rear of the amplifier) is disconnected from the circuit during playback.

Mic 2 Phono

Controls the gain of a phono when plugged into the Phono jack, or a microphone when plugged into the Mic 2 jack. The Mic 2 jack is disconnected from the circuit when a phono is plugged into the Phono jack.

OPERATING INSTRUCTIONS

Threading the Tape

1. Place a reel of tape on left reel flange (9) and an empty reel on right reel flange (9); make sure the reel slots engage the flange pin on the reel flange; tighten reel locks.
2. Unwind about twelve inches of tape from the reel.

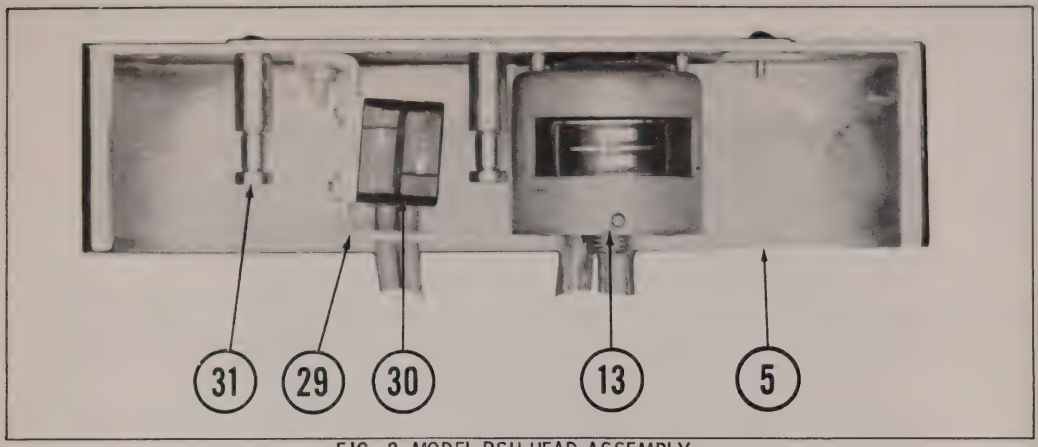


FIG. 2 MODEL PSH HEAD ASSEMBLY

Hold a section of tape taut with both hands and insert it into the tape slot; make sure the dull-coated side faces the heads.

3. Insert the free end of the tape into one of the three radial slots in the hub of the empty reel. Turn the reel several turns counterclockwise until the tape is secured to the reel and all slack is taken up between reels.

To Make a Recording

1. Be sure all amplifier controls are to the extreme left (off) position.
2. Plug the power cord into the receptacle on the rear of the unit and into an outlet of the proper power rating (110-120 volts, 60 cycles AC).
3. Thread the tape. (See "Threading the Tape.")
4. Set the Equal control to the speed to be used and belt to proper groove in transport pulley.
5. Turn on the power to the recorder, and allow it to warm up.
6. Insert the microphone into the Mic 1 jack, and/or a phono into Phono jack or microphone into the Mic 2 jack, on the rear of the recorder. Either a Phono or Microphone 2 may be mixed with Microphone 1.
7. Depress the Record Lock or Locks and turn the Play-Record knob or knobs to Record.
8. Start the tape by snapping the Operational switch to Play-Record.
9. Turn the Gain control or controls until the VU meter or meters indicate the correct recording level. Control the recording level with peaks of not more than 100 on the VU meter.
10. After the recording is completed, turn the Play-Record switch to Play and rewind the tape. The tape cannot be rewound when the Play-Record switch is in Record because this control is interlocked with the fast forward and rewind.

To Play Back a Recording

1. Thread the tape. (See "Threading the Tape.")
2. Turn the amplifier controls all the way to the left (minimum position).
3. Make sure the Play-Record control is in Play.
4. Plug the power cord into the receptacle on the rear of the recorder and into an AC outlet of proper rating.
5. Turn the On-Off switch to On and allow the recorder to warm up.
6. Start the tape by snapping the Operational switch to Play-Record.
7. Turn the Mic 1 Play control to the desired listening level.

Single-Track Recording

Proceed as described under "To Make a Recording", except:

1. Place only one amplifier in the Record position.
2. Turn the Mic 1 Play control on the unused amplifier all the way to the left.

To Edit and Splice Tape

NOTE: One track cannot be edited and spliced without affecting the other. For this reason, do not edit two-track recordings.

1. The tape can be edited by cutting out unwanted portions or by joining selections into another sequence. Announcements, etc., can be inserted between selections. Unused sections of tape can be spliced and re-used.
2. For best results, cut the tape at a slight diagonal, join the ends with splicing tape on the glossy side, and trim any excess width.

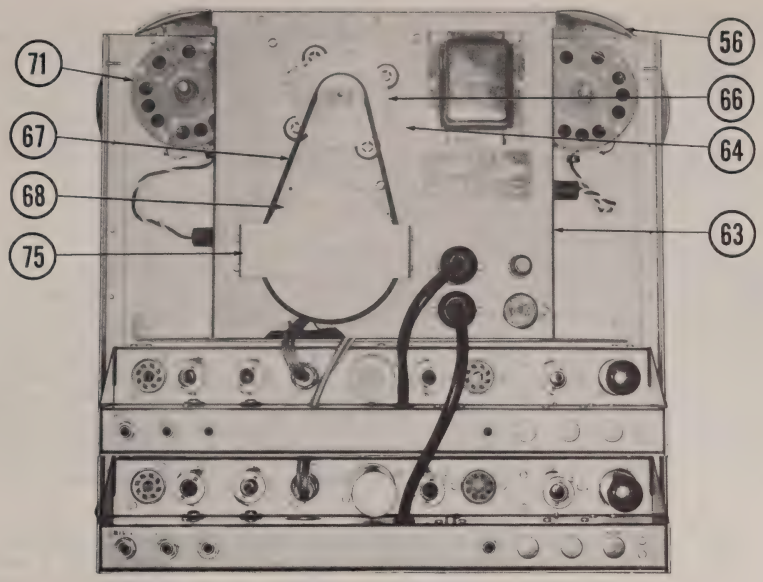


FIG. 3 REAR VIEW OF MODEL GOLD CROWN STEREO X

TAPE-TRANSPORT OPERATION

Electromagnetic braking applies DC to the motors. When the unit is switched from Forward to Stop, approximately 8 volts DC are placed on take-up motor (56) and 14 volts DC on rewind motor (71). When the unit is switched from Rewind to Stop, approximately 8 volts DC are placed on rewind motor (71) and 14 volts DC on take-up motor (56).

A six-position switch controls the transport system. This switch must be turned with a deliberate snapping rather than a squeezing motion.

It will be easy to operate as long as it is moved only one notch at a time and the tape is allowed to stop completely in the Stop position. The tape will loop if the switch is moved too slowly from Thread-Idle to Play-Record.

The tape touches the heads in the Play-Record position only. This action is controlled by cam (46) on the switch shaft. Return spring (35), under outer pressure bar (27), holds the bar away from the heads in all positions except Play-Record.

MECHANICAL ADJUSTMENTS

Pressure Roller

The pressure-roller tension should be 4 to 8 pounds. To measure, place the recorder in Play-Record. Hook a spring balance on the right end of outer pressure bar (27), and pull down until the tape stops. Turn adjusting stud (41) to the right to increase the tension, to the left to decrease it.

Head

The heads are prealigned at the factory and should need no further adjustment. However, should the alignment need rechecking:

1. Remove the nameplate.
2. Thread an alignment tape onto the recorder.
3. Turn the recorder on.
4. Adjust the play and treble knobs until the VU meter shows a clear indication.
5. Turn screw (3) to the right or left, and leave it where the VU meter indication is the highest.
6. If more than 1/2 turn is required, adjust screws (3A) equal amounts in opposite direction to screw 3.

NOTE: Before starting, demagnetize all tools which might contact the head assembly to avoid magnetizing the heads.

BIAS ADJUSTMENT

The bias for each head and recorder is adjusted at the factory. The VU meter is then calibrated to read zero when the Bias push button is depressed. If the bias must be adjusted, simply depress the Bias button and turn the bias-coil slug until the meter reads zero.

When using two units for stereo, make sure their bias oscillators are locked in at the same frequency. This can be checked by placing a pickup coil (approximately 1/4 inch in diameter) on top of the record head while both amplifiers are in Record. Connect the output of the pickup coil to an oscilloscope, and observe the waveform. If it is uneven in amplitude (indicating the presence of a beat note), the two oscillators are not in sync. To lock the two together, SLIGHTLY adjust either or both bias-coil slugs.

TROUBLE CHART

Symptom	Cause	Remedy
Not enough torque in motors.	1. All motors have bronze oilite bearings. While being handled, the recorder may be jarred enough to pull these bearings slightly out of adjustment.	1. Run the motors with no reel on the unit. Lightly tap each end of the motor shaft crosswise with a screwdriver handle, or the motor with a tack hammer.
Tape breaks.	1. Tape wound too loosely on reel.	1. Rewind tape.
	2. Control switch knob not turned properly.	2. Use a deliberate snapping, rather than a squeezing motion, to turn the control switch knob.
	3. Reels not same size.	3. Use only the same size reels on both reel flanges.
Wow and flutter.	1. Drive belt (67) slips.	1. Replace drive belt (67) if it is stretched or oil-soaked. It will also slip if there is a film of oil on flywheel (68). Wipe any oil from affected parts with a clean cloth and carbon tetrachloride.
	2. Dent in pressure roller (25) caused by recorder sitting idle for a long time in the Play-Record position.	2. To remove the dent in pressure roller (25), play the recorder for a few hours. If this does not work, replace pressure roller (25).
	3. Not enough pull between pressure roller (25) and the capstan.	3. Clean pressure roller (25) and the capstan. Increase the pressure-roller tension, (see "Adjustment").
	4. Capstan eccentric.	4. Replace flywheel, shaft, and capstan assembly (68).
No tape drive in Play-Record.	1. Drive belt (67) loose or broken.	1. Replace drive belt (67).
	2. Defective drive motor (54).	2. Replace drive motor (54).
Poor response.	1. Dirty heads.	1. Wipe heads with a soft cloth and carbon tetrachloride.
	2. Improper head alignment.	2. Align heads (see "Head" under "Adjustments").
	3. Worn heads.	3. Replace heads.
Tape does not stop (no braking action).	1. Defective selenium bridge rectifier or component.	1. Replace bridge rectifier or any defective components.

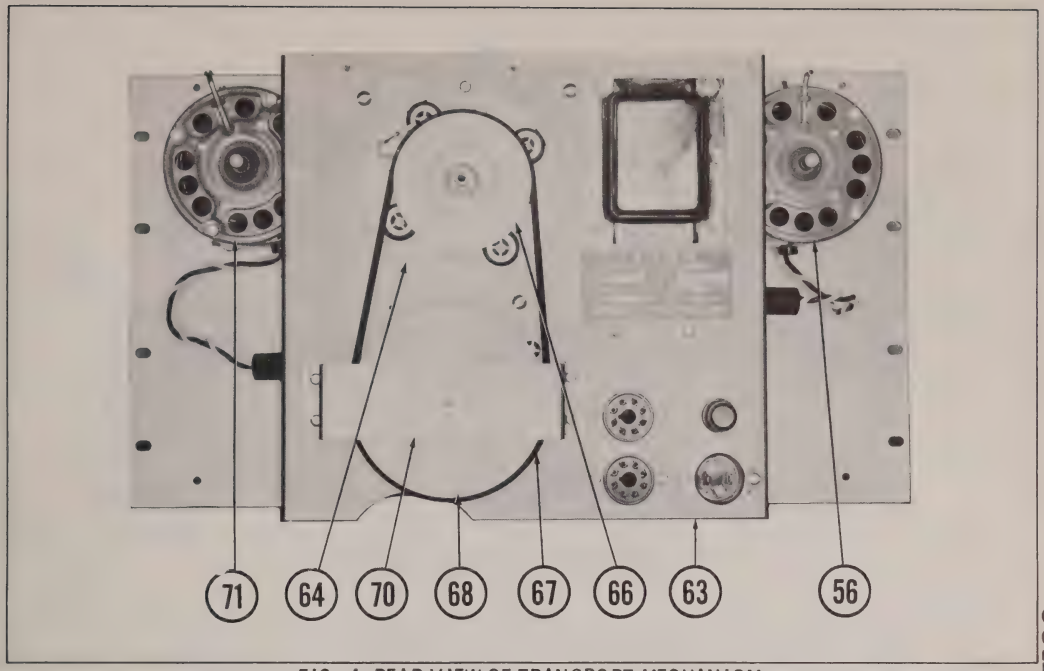


FIG. 4 REAR VIEW OF TRANSPORT MECHANISM

MAINTENANCE

Lubrication

All moving parts operate in lubricated Oilite bearings. Therefore, little oiling is required. The motors and pressure-roller bearings should be oiled lightly after 1,000 hours or one year. Bearing housing assembly (72) should be oiled after 3,000 hours. If any oil seeps to the outer edge of the moving parts and causes the drive mechanism to slip, wipe all affected parts with a clean, soft cloth and carbon tetrachloride. Lubricate the motors with Sinclair or an equivalent household oil.

NOTE: Before removing the drive motors, mark them so they can be replaced in the same way. This is necessary to minimize hum picked up at the head.

CAUTION: Do not overlubricate. Two drops of oil on each motor bearing is enough.

Use a non-detergent No. 10 motor oil for the capstan housing bearing.

Cleaning

Remove excess oil or dirt from moving parts with a clean, soft cloth and carbon tetrachloride. If the recorder is operated frequently, clean the recording heads and pressure pads once a week. Use a clean, soft cloth on the heads, and a brush on the pads. Dirty pressure pads will shorten the life of the recording heads, and dirty heads will cause a low record level and poor erase.

Demagnetization

Magnetized heads cause hissing and distortion. To demagnetize the heads, remove the head assembly. Then use a bulk tape eraser or a head demagnetizer, as follows: Switch on the eraser or demagnetizer, and bring all sides of the head close to it. Slowly move the head assembly away about two feet before switching off the demagnetizer.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1		Nameplate Mounting Screws	3A		Tipping Adjusting Screws
2		Upper Nameplate	4		Thumb Screws (2) (8-32 x 1/2")
3		Azimuth Adjusting Screw	5		Head Cover

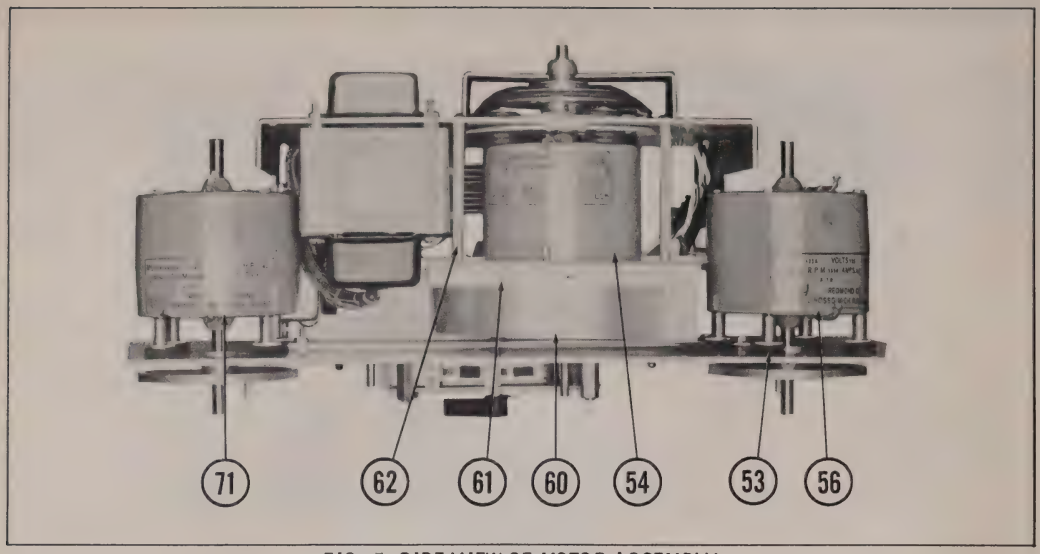


FIG. 5 SIDE VIEW OF MOTOR ASSEMBLY

MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
6		Head Mounting Posts (2)	41		Socket Head Capscrew (6-32 x 1/ 2")
7		Reel Hold Down Knobs	42		Set Screw (8-32 x 1/ 4")
8		Set Screw (10-32 x 3/ 16")	43		Control Switch Knob
9		Reel Flange (2)	44		Lock Nut (10-32)
10		Motor Mounting Screws (8)	45		Inner Pressure Bar Action Adjusting Stud (10-32 x 1 1/ 4")
11		Front Panel			
12		Speed Nuts	46		Cam
13		Play-Record Head	47		Socket Head Cam Screw
14		Washer	48		Automatic Shut-off Actuating Lever
15		Lockwasher	49		Automatic Shut-off Lever
16		Nut	50		Tape Guide Post
17		Left Tape Guide Screws (2)	51		Fan Set Screw
17A		Right Tape Guide Screws (2)	52		Fan
18		Left Tape Guide	53		Motor Mount Grommets
18A		Right Tape Guide	54		Drive Motor
19		Left Pressure Pad Spring	55		Motor Mount Washer
20		Right Pressure Pad Spring	56		Take-up Motor
21		Pressure Pads (2)	57		Upper Drive Motor Plate
22		Inner Pressure Bar	58		Drive Motor Mount Grimmets
23		Pressure Roller Washer	59		Motor Mounting Screws (4)
24		Pressure Roller Shaft	60		Fan Shield
25		Pressure Roller	61		Motor Shield
26		Pressure Roller Washer	62		Spacer (3)
27		Outer Pressure Bar	63		Lower Mounting Plate
28		Nut	64		Lower Drive Motor Plate
29		Erase Head Mounting Bracket	65		Hex Nut (4)
30		Erase Head	66		Motor Drive Pulley
31		Tape Guides (2)	67		Drive Belt
32		Pivot Bolt	68		Flywheel, Shaft, Capstan Ass'y.
33		Sleeve	69		Flywheel Bracket Mounting Screws (4)
34		Return Spring Mounting Screw			
35		Return Spring	70		Flywheel Bracket
36		Tension Spring (2)	71		Rewind Motor
37		Tension Adjuster	72		Bearing Housing Ass'y.
38		Screw (8-32 x 1" trimmit)	73		Screw 3 1/ 2" (3)
39		Pivot Nut	74		Set Screw
40		Lower Nameplate	75		Nylon Bearing

ELECT. PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	Preamplifier	ECC83/12AX7
V2	AF Amplifier	ECC83/12AX7
V3	AF Amp. -Cath Follower	ECC81/12AT7
V4	AF Amp. -Cath Follower	7199 (6AX8) *
V5	Bias Oscillator	6V6GT
V6	AF Amp. -Phase Inv.	12AT7
V7	Driver	12AU7
V8	Output	EL37
V9	Output	EL37

* Alternate

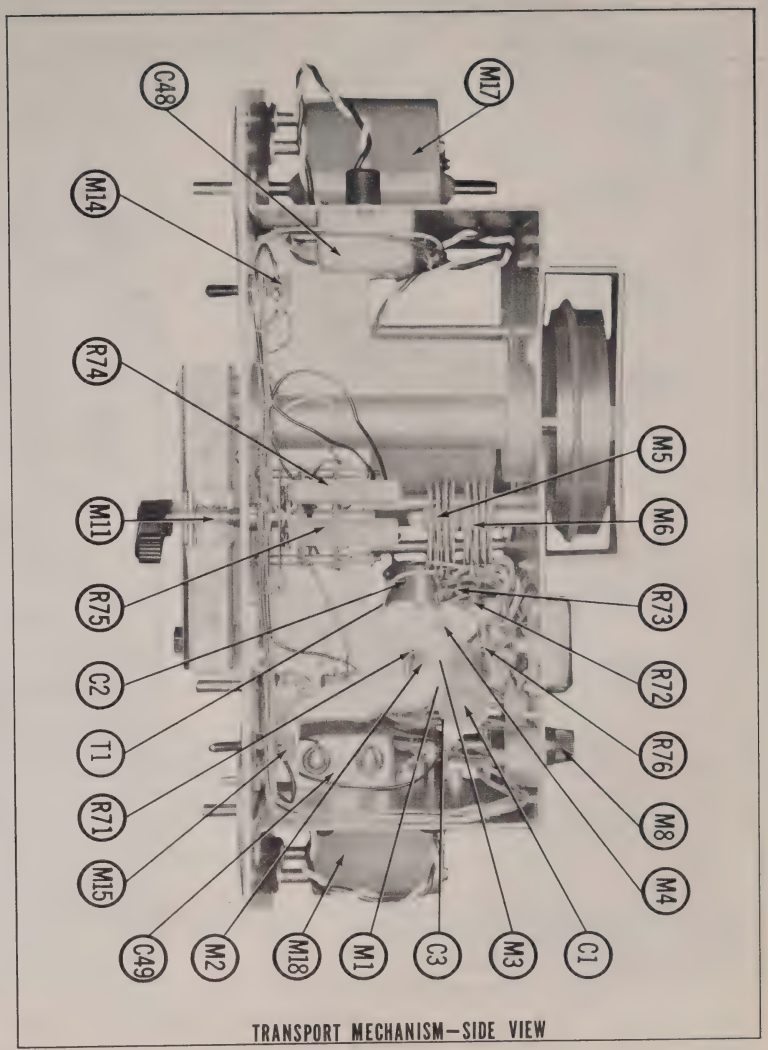
ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CROWN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	20	450		PRSI735	BR2045	TC75	TD-20-450	TVA-1709	
C2	500	50		PRSI390	BR5005			TVA-1315	
C3	500	50		PRSI390	BR5005			TVA-1315	
C4A	10	450		AFH4-17	D0160	FP475.5	TMQ-17	TVL-4771.3	
B	▲40	450							
C	▲10	450							
D	■10	450							
C5	250	6		SRE6V250	BBR250-6	TC50025	TD-250-6	TVA-1102	
C6	5	150		SRE150V5	BBR4-150	TC40	TD-4-150	TVA-1403	
C7	25	25		PRSI260	BBR25-25	TC36	TD-25-25	TVA-1205	
C8	5	150		SRE150V5	BBR4-150	TC40	TD-4-150	TVA-1403	
C9A	▲40	475		AFH4-19-40	D0179.7	FP475.5	TMT-45	TVL-4838	
B	▲10	475					TD-30-500		
C	■10	475							
D	10	475							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C11	.04 200V		P288N-04	DD-403	CUB6S4	4DP-3-403	GEM-414	4TM-S4
C12	.04 200V		P288N-04	DD-403	CUB6S4	4DP-3-403	GEM-414	4TM-S4
C13	.04 200V		P288N-04	DD-403	CUB6S4	4DP-3-403	GEM-414	4TM-S4
C14	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C15	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C16	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C17	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C18	.002 400V		P488N-002	D6-202	CUB6D2	6DP-1-202	GEM-622	6TM-D2
C19	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S1
C20	190		1468-0002	TCZ-200	5W5T2	CM-19B-201M	MC237	1FM-32
C21	.5 200V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P5
C22	.5 200V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P5
C23	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C24	.02 200V		P288N-02	DD-203	CUB2S2	4DP-2-203	GEM-412	2TM-S2
C25	.5 200V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P5
C26	1000		1468-001		5W5D1	CM-19B-102M	MC255	1FM-21
C27	1000		1468-001		5W5D1	CM-19B-102M	MC255	1FM-21
C28	.001 600V		P688N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D1
C29	47 10%		1469-000047	TCZ-47	22R5Q47	CM-19B-470K	MCB225	MS-447
C30	100 5%		1469-0001	TCZ-100	22R5T1	CM-19B-101J	MCE235	MS-31
C31	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C32								
C33								
C34								
C35	47 10%		1469-000047	TCZ-47	22R5Q47	CM-19B-470K	MCB255	MS-447
C36								
C37	470		1468-00047		5R5T47	CM-19B-471M	MC245	1FM-347
C38								
C39	1000		1468-001		5W5D1	CM-19B-102M	MC255	1FM-21
C40								
C41								
C42	.01 400V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S1
C43	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C44	.15 200V		P288N-15		CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C45	.15 200V		P288N-15		CUB2P15	2DP-3-154	GEM-2015	2TM-P15



TRANSPORT MECHANISM—SIDE VIEW

ELECT. PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C46	.5 600V		P688N-5		CUB6P5		GEM-605	6TM-P5
C47	.5 600V		P688N-5		CUB6P5		GEM-605	6TM-P5
C48	1mfd 600V		JP630M-1.0		DYR6100			BP-10
C49	1mfd 600V		JP630M-1.0		DYR6100			BP-10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROWN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg	½	BH4514	B-69	A47-1meg-S	Q11-137	U54	Volume
B	Shaft			Not Req.	RS-2	Not Req.	Not Req.	
R2A	1meg	½	BH4514	B-69	A47-1meg-S	Q11-137	U54	Mic. 1 (Play)
B	Shaft			Not Req.	RS-2	Not Req.	Not Req.	
R3A	1meg	½	BH4514	B-69	A47-1meg-S	Q11-137	U54	Mic. 2 (Phono)
B	Shaft			Not Req.	RS-2	Not Req.	Not Req.	
R4	1meg	½	FY8548					Bass
R5	5000Ω	½	DQ4274					Treble
R6A	15K	½	DW5313			B11-118	PTA153L	Equalization Adj., Slow
B	Shaft					TM4	Not Req.	
R7A	15K	½	DW5313			B11-118	PTA153L	Equalization Adj., Medium
B	Shaft					TM4	Not Req.	
R8A	15K	½	DW5313			B11-118	PTA153L	Equalization Adj., Fast
B	Shaft					TM4	Not Req.	
R9A	1meg	½	FY8549		B47-1meg-Z	B13-137	TA16A	Record Calibrate
B	Shaft				Not Req.	TM4	Not Req.	
R10A	15K	½	DW5313			B11-118	PTA153L	Bias
B	Shaft					TM4	Not Req.	
R11A	15K	½	DW5313			B11-118	PTA153L	Bias
B	Shaft					TM4	Not Req.	
R12	500Ω	2(WW)						Bias Calibrate

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R13	560Ω	
R14	10meg	
R15	270K 1W	
R16	2200Ω	
R17	10meg	
R18	10meg	
R19	270K	
R20	270K	
R21	270K	
R22	270K	
R23	2200Ω	
R24	470Ω	
R25	10meg	
R26	180K	
R27	820K	
R28	270K	
R29	1000Ω	
R30	270K	
R31	12K 1W	
R32	3900Ω	
R33	10K 1W	
R34	2200Ω	

ITEM No.	RATING	REMARKS
R35	2200Ω	
R36	180K	
R37	270K	
R38	820K	
R39	3900Ω	
R40	18K 1W	
R41	10meg	
R42	270K	
R43	270K	
R44	180K	
R45	100K	
R46	39K 1W	
R47	56K	
R48	5000Ω 5W	
R49	8200Ω 2W	
R50	22K 1W	
R51	39K 1W	
R52	270K	
R53	2200Ω	
R54	56K	
R55	180K	
R56	100K	

ITEM No.	RATING	REMARKS
R57	100K	
R58	270K	
R59	100K	
R60	2200Ω	
R61	270K	
R62	100K	
R63	180K	
R64	10K	
R65	220Ω 10W	
R66	220Ω 10W	
R67	180K	
R68	22K 1W	
R69	22K 1W	
R70	39K 1W	
R71	47Ω 1W	
R72	5.1Ω	
R73	15Ω 2W	
R74	15Ω 10W	
R75	25Ω 10W	
R76	270K 1W	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		CROWN PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Bias Osc. Coil							100MH
L2	Bias Trap							100MH
L3	Record Equalization							

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .8A Tap @ 80V @ .56A *	260V @ .110A	6.3 VCT @ 4.2A	200P6						
	SEC. 3	SEC. 4	SEC. 5							
	24V @ .150A	21V @ 1.3A								

* Play-Record Only

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6800Ω CT Tap @ 1400Ω CT	16Ω Tap @ 8Ω, 4Ω	200A1							

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	CROWN PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.110A (Bridge Output)	①	SD-500 ①	HA505 ①	F6 ①		① Silicon Type
M2		①	SD-500 ①	HA505 ①	F6 ①		② Selenium Type
M3		①	SD-500 ①	HA505 ①	F6 ①		③ Dual Diode
M4		①	SD-500 ①	HA505 ①	F6 ①		
M5	1.3A	②					
M6	.150A	②					
M7	Signal	③					

FUSES

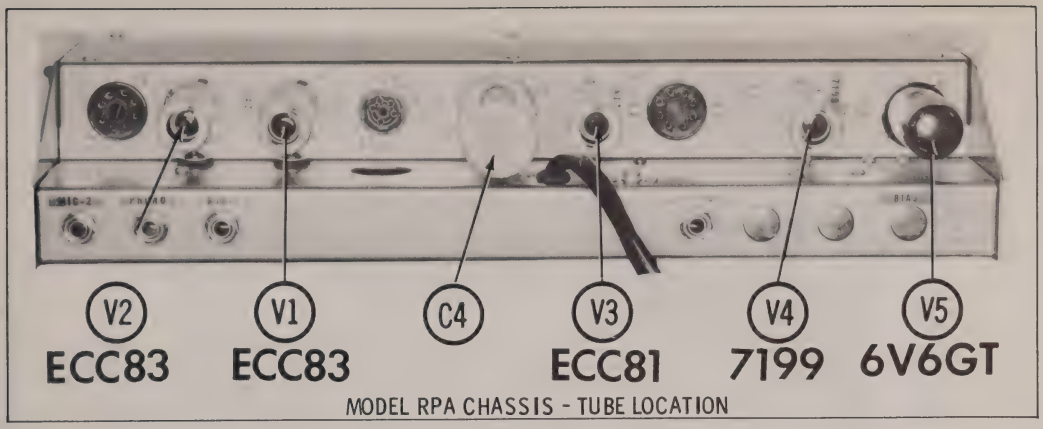
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CROWN PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M8	3AG	3A 250V			312003 (3AG 3A 250V)	342001	AGC3	HCM

MISCELLANEOUS

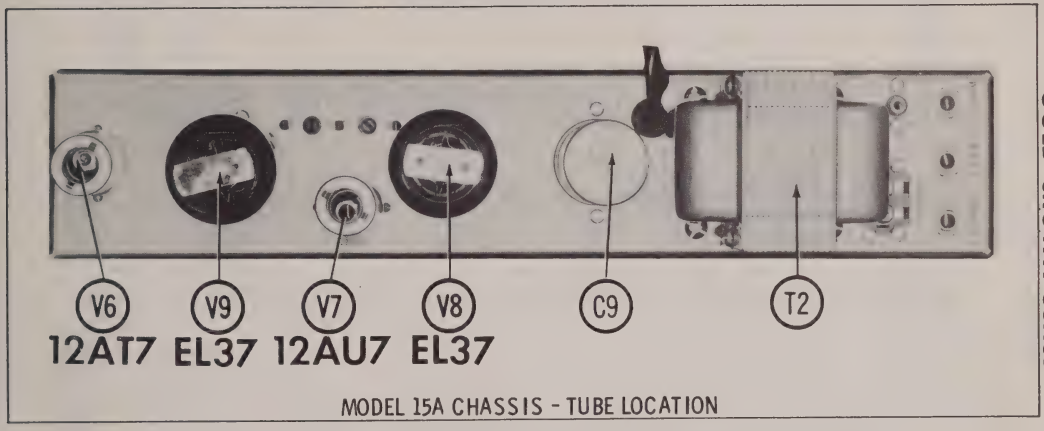
ITEM No.	PART NAME	CROWN PART No.	NOTES
M9	Head Ass'y.		Complete, Includes record & play head Part #8K1072, and erase head Part #8K1110
M10	Switch		Function (Record-Playback)
M11	Switch		Operations
M12	Switch		Bias (Pushbutton mounting contact DPDT)
M13	Switch		Equalization
M14	Switch		Reel Size (SPDT)
M15	Switch		Power Off-On (SPDT)
M16	Switch		Power Off-On (SPDT) Amp. Chassis
M17	Motor		Takeup
M18	Motor		Payoff
M19	Motor		Drive
M20	Meter		Volume Level Indicator

WIRING DATA

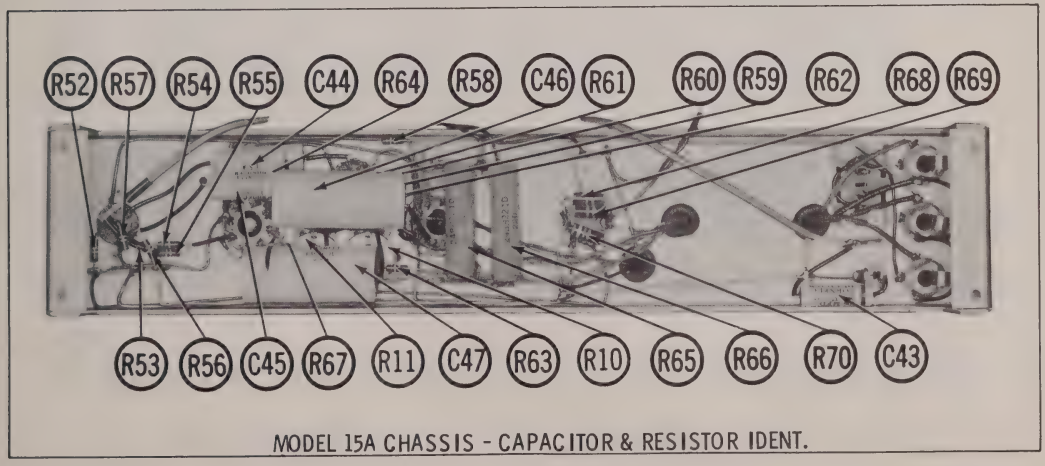
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



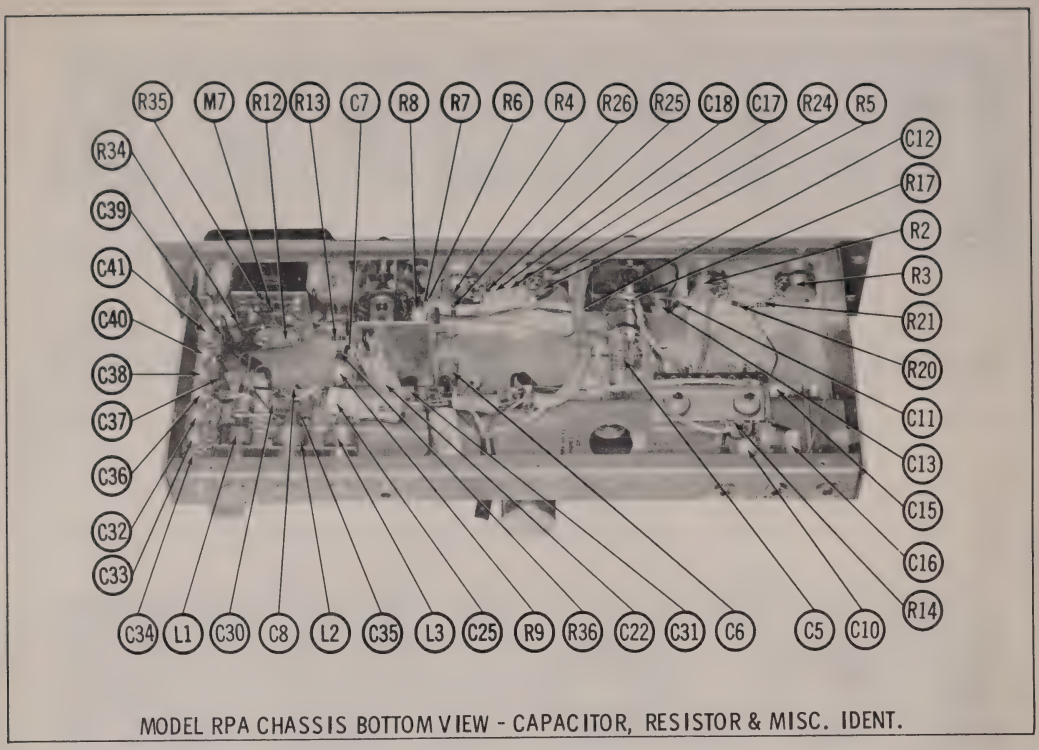
MODEL RPA CHASSIS - TUBE LOCATION



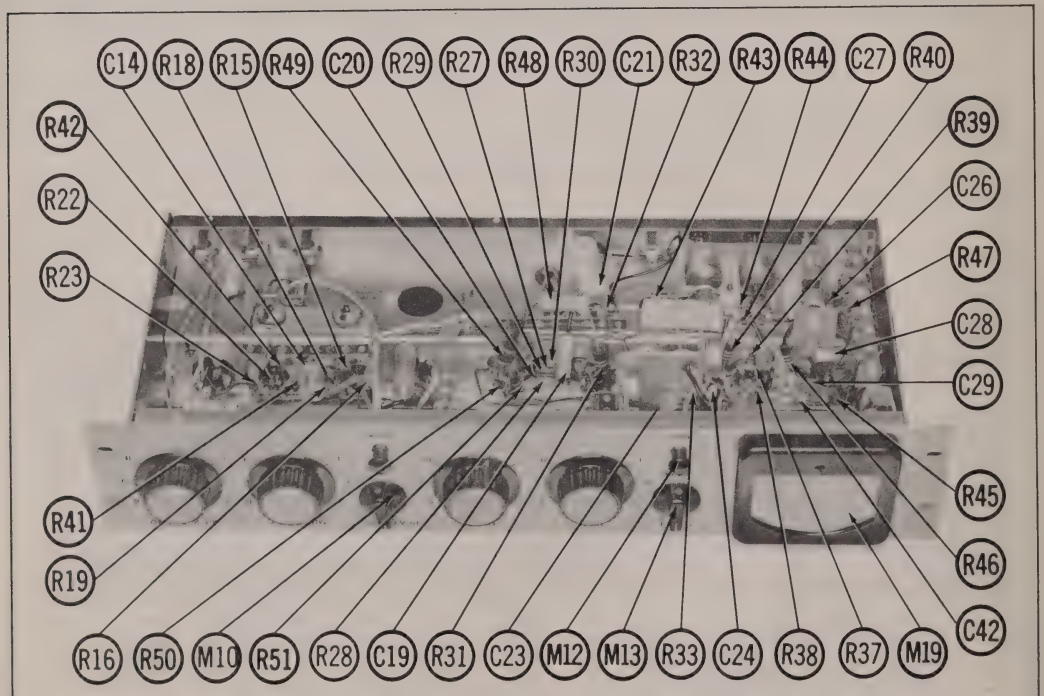
MODEL 15A CHASSIS - TUBE LOCATION



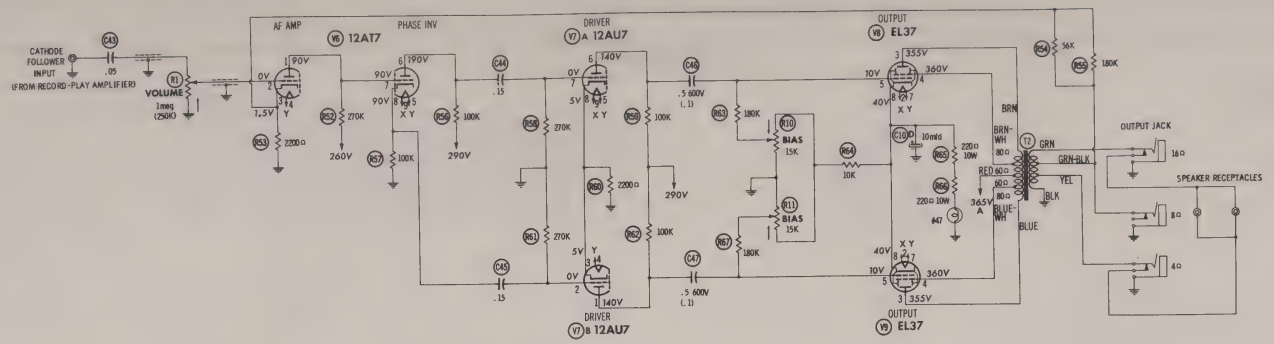
MODEL 15A CHASSIS - CAPACITOR & RESISTOR IDENT.



MODEL RPA CHASSIS BOTTOM VIEW - CAPACITOR, RESISTOR & MISC. IDENT.



MODEL RPA CHASSIS BOTTOM VIEW - CAPACITOR, RESISTOR & MISC. IDENT.

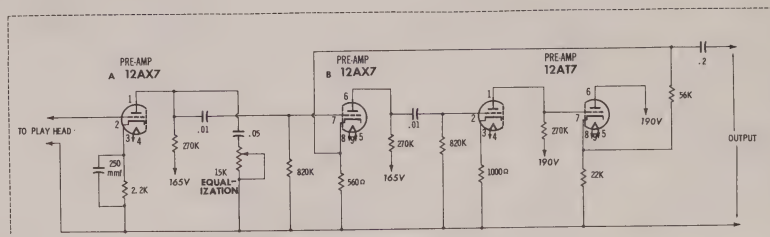


RESISTANCE READINGS (CONT.)

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V6	12AT7	†320K	0Ω	2200Ω	.3Ω	.3Ω	†110K	†320K	100K	.3Ω
V7	12AU7	†110K	270K	2200Ω	.3Ω	.3Ω	†110K	270K	2200Ω	.3Ω
V8	EL37	NC	.3Ω	†187Ω	†107Ω	200K	TP	.3Ω	440Ω	
V9	EL37	NC	.3Ω	†187Ω	†107Ω	200K	TP	.3Ω	440Ω	

† MEASURED FROM OUTPUT OF M2 AND M4.
NC NO CONNECTION
TP TIE POINT

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



PRE-AMP MODELS SPP & MPP (NOTE: MODEL SPP IS A DUAL MPP)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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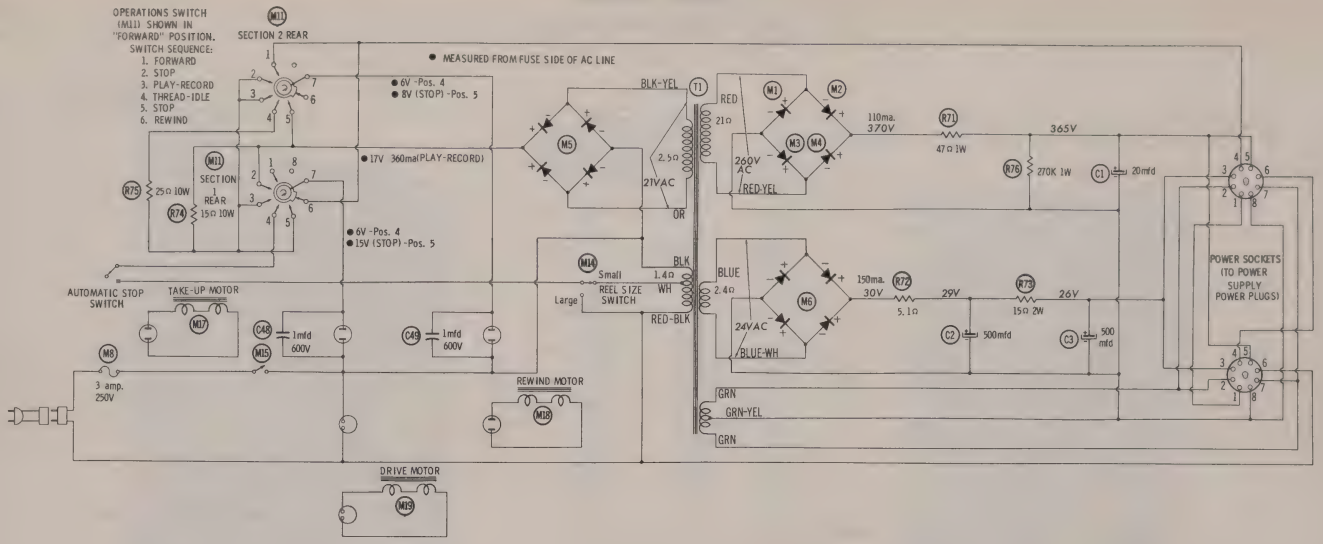
CROWN MODEL GOLD CROWN Series

MODELS 15A AND MPP

CROWN MODEL
GOLD CROWN Series



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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CROWN MODEL
GOLD CROWN Series

TRANSPORT

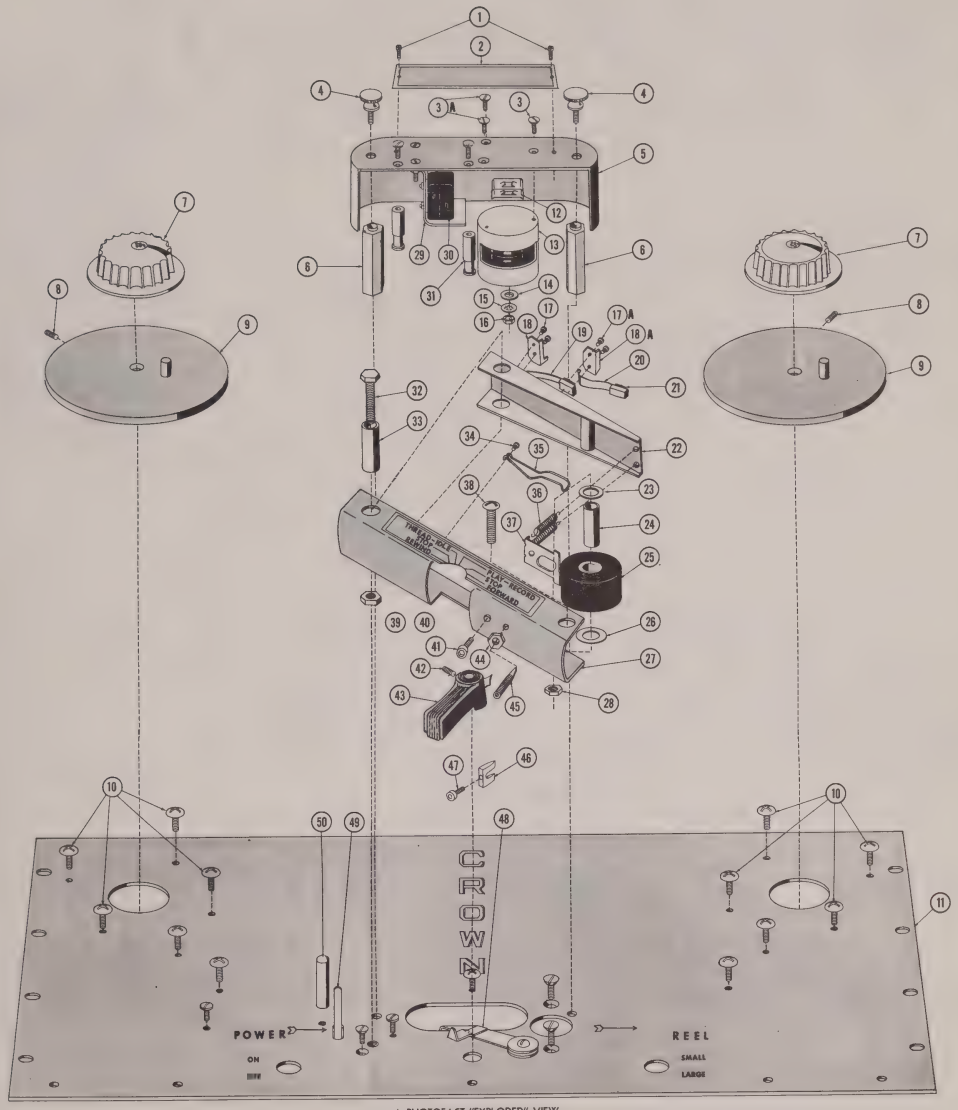


FIG. 6A EXPLODED VIEW OF PARTS IN FRONT OF FRONT PANEL

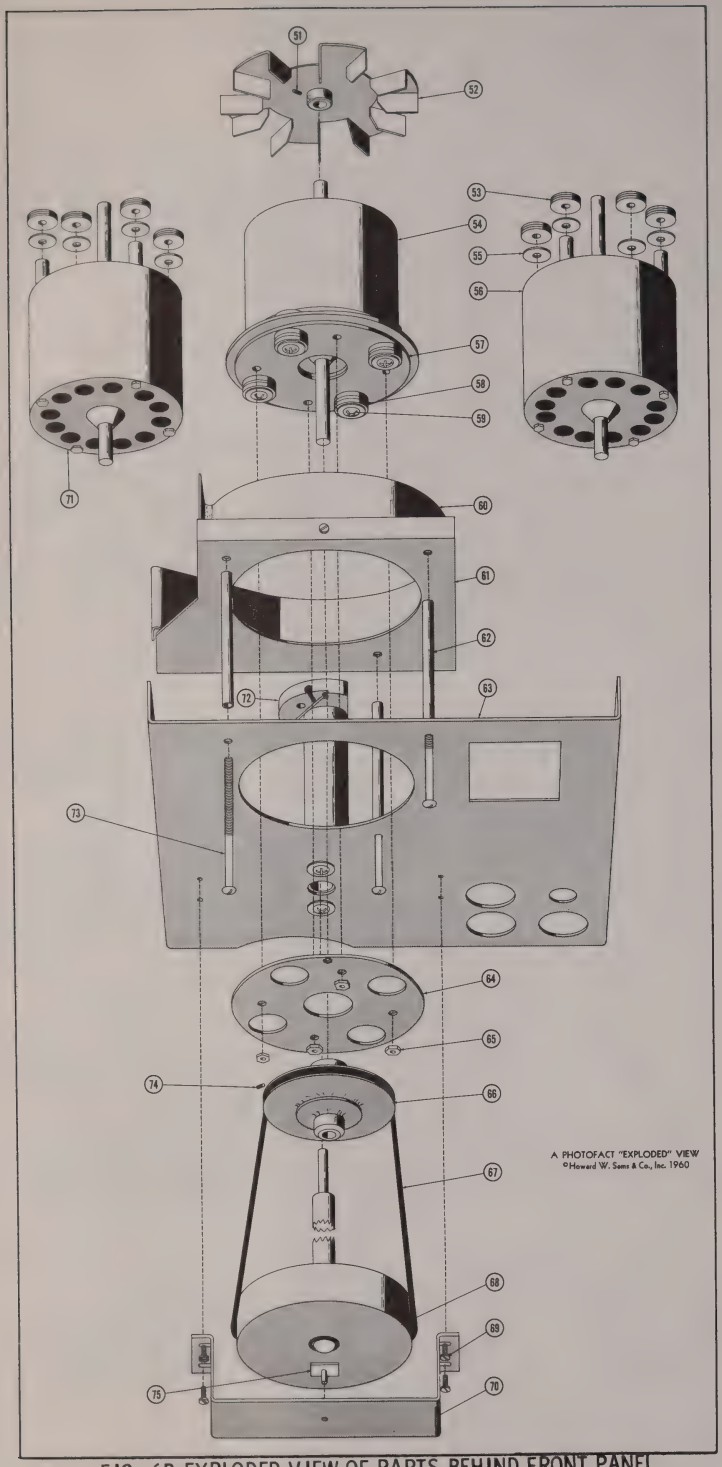
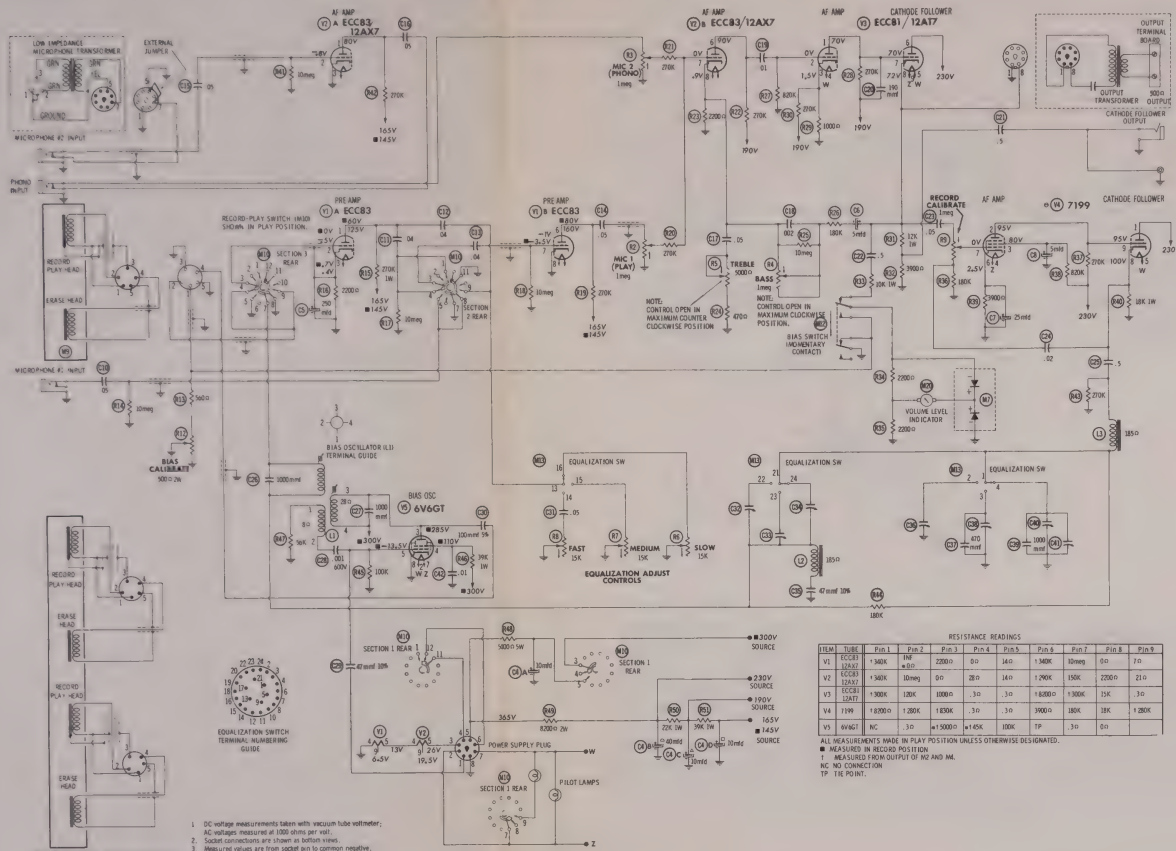


FIG. 6B EXPLODED VIEW OF PARTS BEHIND FRONT PANEL


AF AMP V2A ECC83/12AX7
AF AMP V2B ECC83/12AX7
AF AMP
CATHODE FOLLOWER V3 ECC81/12AT7
LOW IMPEDANCE MICROPHONE TRANSFORMER
EXTERNAL JUMPER
GROUND
MICROPHONE #2 INPUT
PHONO INPUT
MIC 2 (PHONO) 1meg
MIC 1 (PLAY) 1meg
OUTPUT TERMINAL BOARD
OUTPUT TRANSFORMER
500Ω OUTPUT
CATHODE FOLLOWER OUTPUT
PRE AMP V1A ECC83
PRE AMP V1B ECC83
RECORD-PLAY SWITCH (M10) SHOWN IN PLAY POSITION.
SECTION 1 REAR
SECTION 2 REAR
RECORD PLAY HEAD
ERASE HEAD
MICROPHONE #1 INPUT
BIAS CALIBRATE 500Ω 2W
BIAS OSCILLATOR (L1) TERMINAL GUIDE
BIAS OSC V5 6V6GT
TREBLE 500Ω
BASS 1meg
NOTE: CONTROL OPEN IN MAXIMUM COUNTER CLOCKWISE POSITION
NOTE: CONTROL OPEN IN MAXIMUM CLOCKWISE POSITION.
BIAS SWITCH (MOMENTARY CONTACT)
RECORD CALIBRATE 1meg
AF AMP V4 7199
CATHODE FOLLOWER
VOLUME LEVEL INDICATOR
EQUALIZATION SW
EQUALIZATION ADJUST CONTROLS
FAST 15K
MEDIUM 15K
SLOW 15K
EQUALIZATION SWITCH TERMINAL NUMBERING GUIDE
DUAL RECORD-PLAY & ERASE HEAD ASSEMBLY USED FOR STEREO OPERATION
SECTION 1 REAR
SECTION 2 REAR
POWER SUPPLY PLUG
PILOT LAMPS
300V SOURCE
230V SOURCE
190V SOURCE
165V SOURCE
145V SOURCE
6.3V
19.5V
365V
1 DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.
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CROWN MODEL
GOLD CROWN Series

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC83/12AX7	340K	INF ■820	2200Ω	0Ω	14Ω	340K	10meg	0Ω	7Ω
V2	ECC83/12AX7	340K	10meg	0Ω	2Ω	14Ω	290K	150K	2200Ω	21Ω
V3	ECC81/12AT7	300K	120K	1000Ω	.3Ω	.3Ω	8000Ω	300K	15K	.3Ω
V4	7199	8200Ω	250K	850K	.3Ω	.3Ω	3900Ω	180K	18K	250K
V5	6V6GT	INC	.3Ω	■15000Ω	■145K	100K	TP	.3Ω	0Ω	

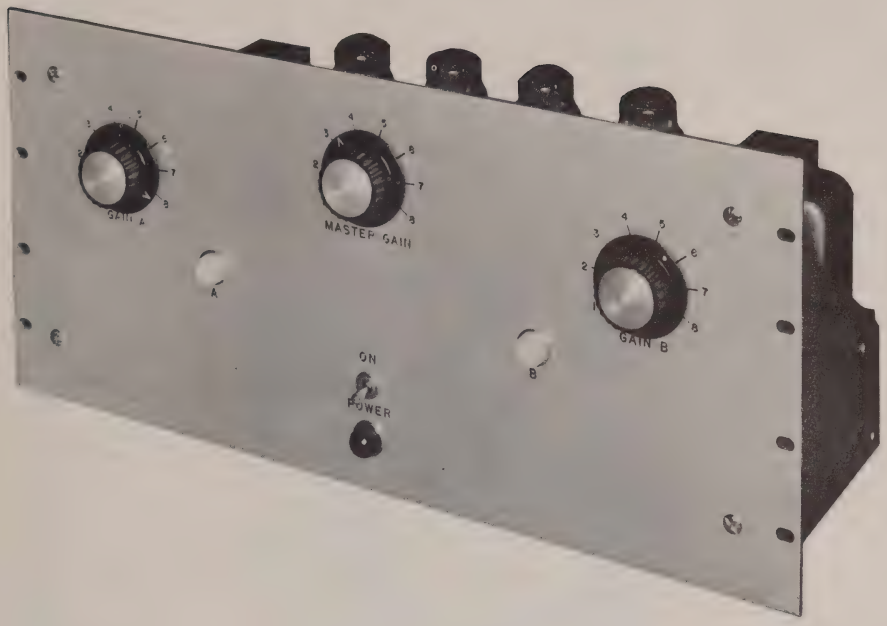
ALL MEASUREMENTS MADE IN PLAY POSITION UNLESS OTHERWISE DESIGNATED.
■ MEASURED IN RECORD POSITION
† MEASURED FROM OUTPUT OF M2 AND M4.
INC NO CONNECTION
TP TIE POINT.

MODEL RPA

PHOTOFACT® Folder

CROWN
MODEL SXA

CROWN
MODEL SXA



CROWN
MODEL SXA

TRADE NAME	Crown Model SXA
IMPORTER	"Crown" International, A Subsidiary of International Radio and Electronics Corp., Box 261, South 17th Street and Mishawaka Road, Elkhart, Indiana
TYPE SET	AC Operated 8 Tube Stereo Amplifier
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 135 Watts, 1.3 Amp @ 117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

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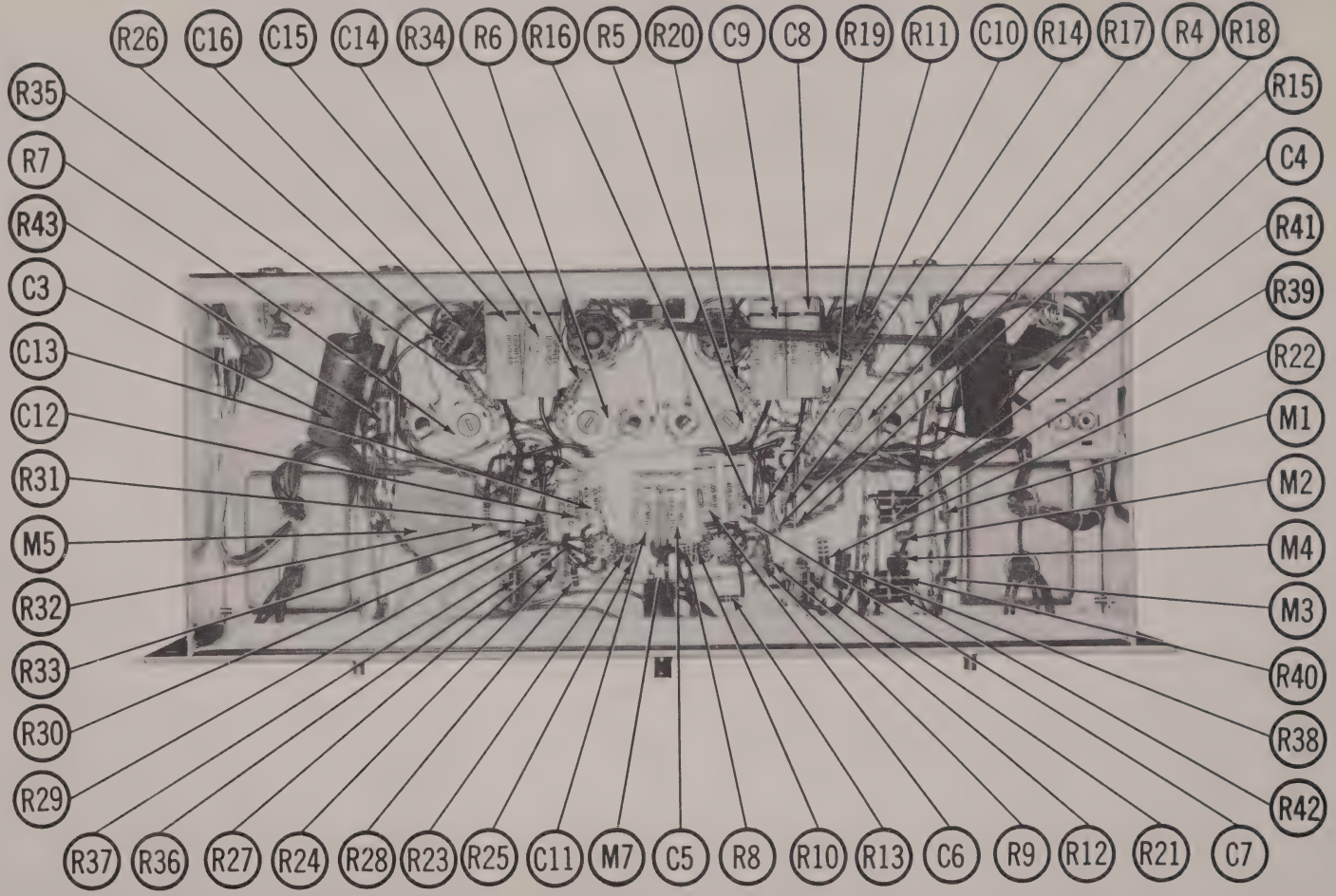


CHASSIS-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel A AF Amp - Phase Inverter	ECC81/12AT7	V5	Channel B AF Amp - Phase Inverter	ECC81/12AT7
V2	Channel A Driver	6SN7GTB	V6	Channel B Driver	6SN7GTB
V3	Channel A Output	EL37 (6L6) *	V7	Channel B Output	EL37 (6L6) *
V4	Channel A Output	EL37 (6L6) *	V8	Channel B Output	EL37 (6L6) *

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA CROWN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	475		AFH4-19-40	L0160	FP475.5	TMQ-123	TVL-4838	
B	▲10	475							
C	10	475							
D	■10	475							
C2A	▲40	475		AFH4-19-40	D0160	FP475.5	TMQ-123	TVL-4838	
B	▲10	475							
C	10	475							
D	■10	475							
C3	80	150		PRS1500	BR8015	TC492	TD-80-150	TVA-1418	
C4	80	150		PRS1500	BR8015	TC492	TD-80-150	TVA-1418	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

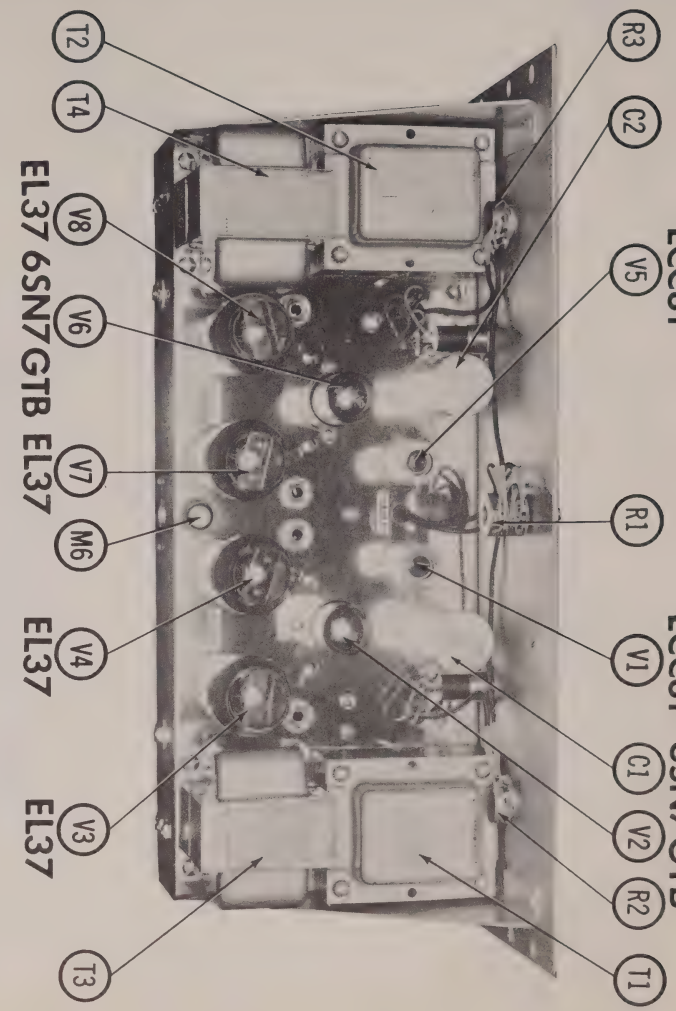
ITEM No.	RATING		REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	.05	200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C6	.05	400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C7	.05	400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C8	.1	600V	(.15) †	P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C9	.1	600V	(.15) †	P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C10	20	5%	(22) †	1469-00002	TCZ-20	22R5Q2	CM-20B-200J		MS-42
C11	.05	200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S5
C12	.05	400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C13	.05	400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C14	.1	600V	(.15) †	P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C15	.1	600V	(.15) †	P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P1
C16	25	5%	(22) †	1469-000025	TCZ-25	22R5Q25	CM-20B-240J	MCE220	MS-425

† Alternate Value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CROWN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	250K	1/2	FY8588	AB-51	AD47-250K-Z		FA254A	Master Gain, Channel A
B	250K	1/2		SR-51	Not Req.		RU254A	Master Gain, Channel B
C	Shaft			AK-9	RS-2		CS3500	
R2A	250K	1/2	FY8713	AB-51	A47-250K-Z	Q13-130	U44	Gain, Channel A
B	Shaft			AK-9	RS-2	Not Req.	Not Req.	
R3A	250K	1/2	FY8713	AB-51	A47-250K-Z	Q13-130	U44	Gain, Channel B
B	Shaft			AK-9	RS-2	Not Req.	Not Req.	
R4A	15K	1/2	DW5313			B11-118	PTA153L	Bias, 1st Output
B	Shaft					TM4	Not Req.	
R5A	15K	1/2	DW5313			B11-118	PTA153L	Bias, 2nd Output
B	Shaft					TM4	Not Req.	
R6A	15K	1/2	DW5313			B11-118	PTA153L	Bias, 3rd Output
B	Shaft					TM4	Not Req.	
R7A	15K	1/2	DW5313			B11-118	PTA153L	Bias, 4th Output
B	Shaft					TM4	Not Req.	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R8	470K	(270K) *
R9	270K	
R10	2200Ω	
R11	100K	
R12	100K	
R13	100K	
R14	470K	(270K) *
R15	100K	
R16	2200Ω	
R17	470K	(270K) *
R18	100K	
R19	180K	

ITEM No.	RATING	REMARKS
R20	180K	
R21	12K 2W	
R22	39K	
R23	470K	(270K) *
R24	270K	
R25	2200Ω	
R26	100K	
R27	100K	
R28	100K	
R29	470K	(270K) *
R30	100K	
R31	2200Ω	

ITEM No.	RATING	REMARKS
R32	470K	(270K) *
R33	100K	
R34	180K	
R35	180K	
R36	12K 2W	
R37	39K 2W	
R38	15Ω 2W	
R39	15Ω 2W	
R40	15Ω 2W	
R41	15Ω 2W	
R42	15Ω 2W	
R43	470Ω 1W	

* Alternate Value.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117 V ⓐ 1.3A tap ⓐ 87 V	730 VCT ⓐ .065A	6.3 VCT ⓐ 2.85A	200P3						
	SEC. 3	SEC. 4	SEC. 5							
	5 V Not Used	42 VCT ⓐ .070A								

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	117 V ⓐ 1.3A tap ⓐ 87 V	730 VCT ⓐ .065A	6.3 VCT ⓐ 2.7A	.200P3						
	SEC. 3	SEC. 4	SEC. 5							
	5 V Not Used	42 VCT Not Used								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	6200 Ω CT tap ⓐ 1300 Ω CT	16Ω tap ⓐ 8Ω, 4Ω	200A1							
T4	6200 Ω CT tap ⓐ 1300 Ω CT	16Ω tap ⓐ 8Ω, 4Ω	200A1							

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	CROWN PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.065A	*	* 2E4	* HA154	* K200	* SR200	* Silicon
M2	.065A	*	* 2E4	* HA154	* K200	* SR200	♦ Selenium Bridge
M3	.065A	*	* 2E4	* HA154	* K200	* SR200	
M4	.065A	*	* 2E4	* HA154	* K200	* SR200	
M5	.010A	♦					

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			CROWN PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M6	AGC	3A 250V			312003 (AG3 3A 250V)	342001	AGC3	HKP

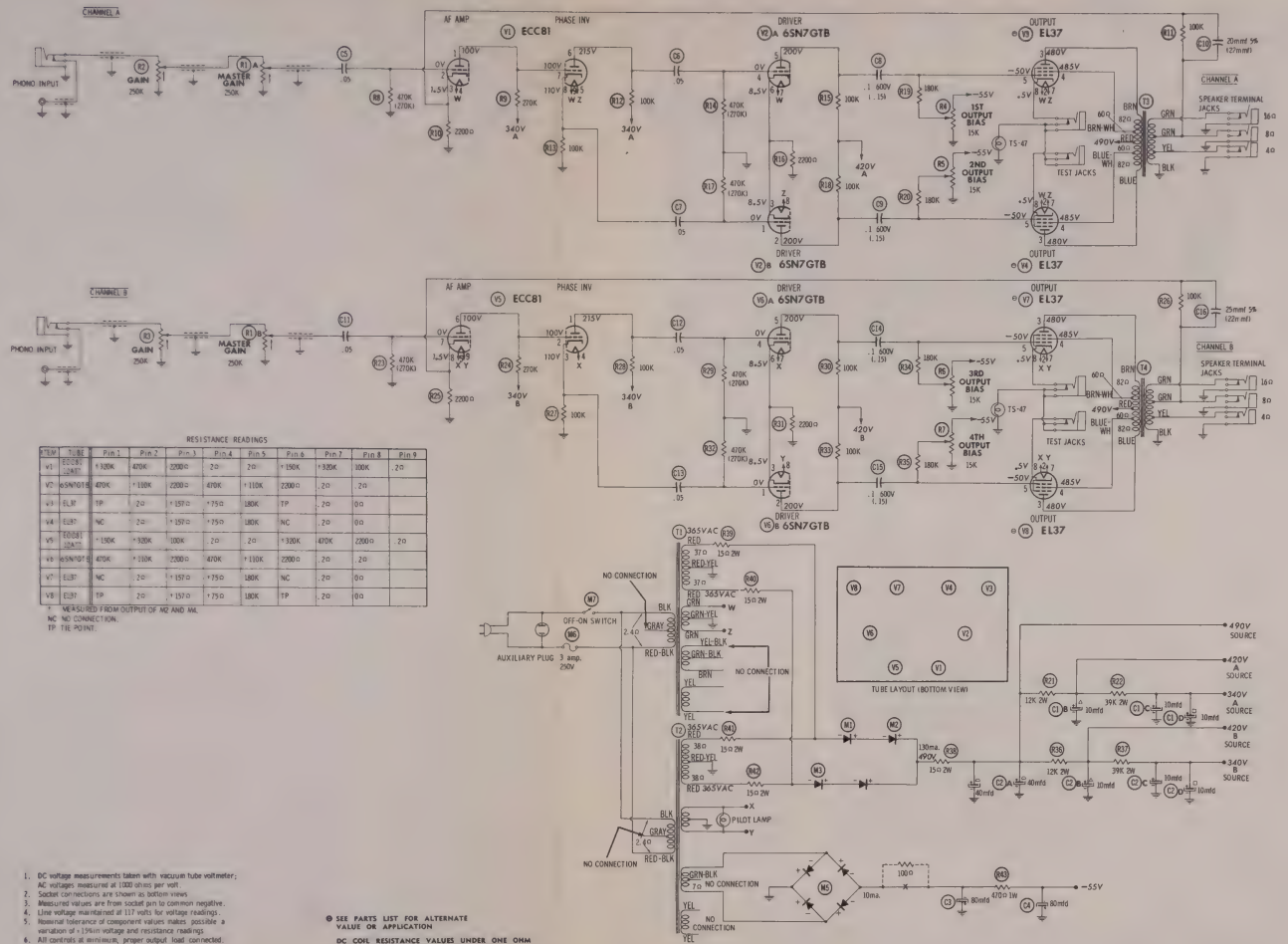
MISCELLANEOUS

ITEM No.	PART NAME	CROWN PART No.	NOTES
M7	Switch		Power Off-On (Toggle)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC81 (CHART)	*320K	470K	2200Ω	2Ω	2Ω	*150K	*320K	100K	2Ω
V2	6SN7GTB	470K	*110K	2200Ω	470K	*110K	2200Ω	2Ω	2Ω	
V3	EL37	TP	2Ω	*157Ω	*75Ω	180K	TP	2Ω	0Ω	
V4	EL37	NC	2Ω	*157Ω	*75Ω	180K	NC	2Ω	0Ω	
V5	ECC81 (CHART)	*150K	*320K	100K	2Ω	2Ω	*320K	470K	2200Ω	2Ω
V6	6SN7GTB	470K	*110K	2200Ω	470K	*110K	2200Ω	2Ω	2Ω	
V7	EL37	NC	2Ω	*157Ω	*75Ω	180K	NC	2Ω	0Ω	
V8	EL37	TP	2Ω	*157Ω	*75Ω	180K	TP	2Ω	0Ω	

* MEASURED FROM OUTPUT OF M2 AND M4.
NC NO CONNECTION.
TP TIE POINT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt
2. Socket connections are shown as bottom views
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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⊛ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

CROWN MODEL SXA

PHOTOFACT® Folder

**DYNAMIC MODEL
AS-40R (Ch. 400)**

DYNAMIC MODEL
AS-40R (Ch. 400)

DYNAMIC MODEL
AS-40R (Ch. 400)

TRADE NAME	Dynamic Model AS-40R (Ch. 400)
MANUFACTURER	Dynamic Electronics, New York, Inc., 87-46 123rd Street, Richmond Hill 18, L. I., N. Y.
TYPE SET	AC Operated 5 Tube Audio Amplifier
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 62 Watts, .63 Amp. @117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JX776

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PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	AF Amplifier	6C4	V4	Output	EL84/6BQ5
V2	AF Amp. -Phase Inv.	12AX7	V5	Rectifier	EZ81/6CA4
V3	Output	EL84/6BQ5			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	DYNAMIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	40	400		PR4-200	C0355	WQ795	CDBQ-4422	TVAS-3669 *	
B	40	400							
C	20	400							
C2	20	25NP		PRS7350	BR505 †	TCN3520		TVANS-1204.6*	
C3	20	25NP		PRS7350	BR505 †	TCN3520		TVANS-1204.6*	

† Use 2 units. Connect negative terminals together. Connect positive terminals into circuit the same as the original non-polarized unit.

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

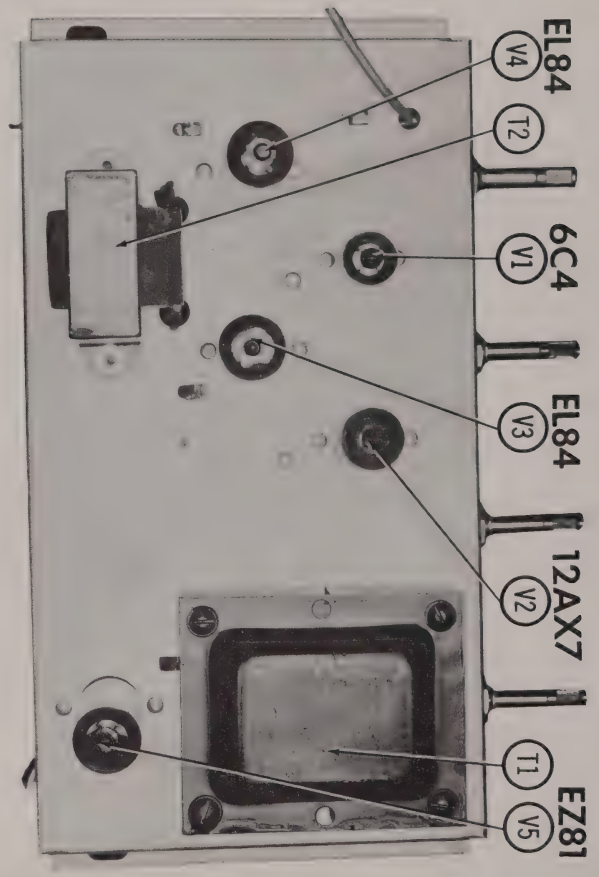
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	680		BPD-00068	DD-681	BYA10T68	CCD-681	GP368	10TS-T68
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C6	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C7	100 N150					*		10TCP-T10
C8	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C9	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C10	1000		BPD-001	DD-102	BYA10D1	CCD-102	GP210	5HK-D10
C11	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C12	2000		BPD-002	DD-202	BYA10D2	CCD-202	GP220	5HK-D20
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C14	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C16	56 N150					*		10TCP-Q56
C17	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C18	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	DYNAMIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg 250K Tap	½	CM23074	BT-72	A47F4-1meg	Q13-137X	UT-440	Loudness
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	1meg	½	CM23076	B-70	A47-1meg-Z	Q13-137	U53	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	1meg	½	CM23075	B-70-S	A47-1meg-Z	Q13-137	U53	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	470K	
R5	3.3meg	
R6	68K	
R7	27K	
R8	1000Ω	
R9	68K	
R10	10K	

ITEM No.	RATING	REMARKS
R11	220K	
R12	150K	
R13	15K	
R14	150K	
R15	3300Ω	
R16	1000Ω	
R17	150K	

ITEM No.	RATING	REMARKS
R18	1meg	
R19	150K	
R20	3300Ω	
R21	470K	
R22	150Ω 2W	
R23	470K	
R24	27K	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	DYNAMIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .63A	580 VCT @ .080A	6.3V @ 2.9A	PT-67	22R04	P-3052		PM8404	22R04	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	DYNAMIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	7000Ω CT	6-8Ω		24S07	A-2901	AU-600	A-3852	24S07	S-53X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	DYNAMIC PART No.	QUAM PART No.	
SP1	12"	PM	6-8Ω		12A1Z7.9	
SP2	8"	PM	4-6Ω		8A1Z5.7	
SP3	4"	PM	6-8Ω		3A1ST	

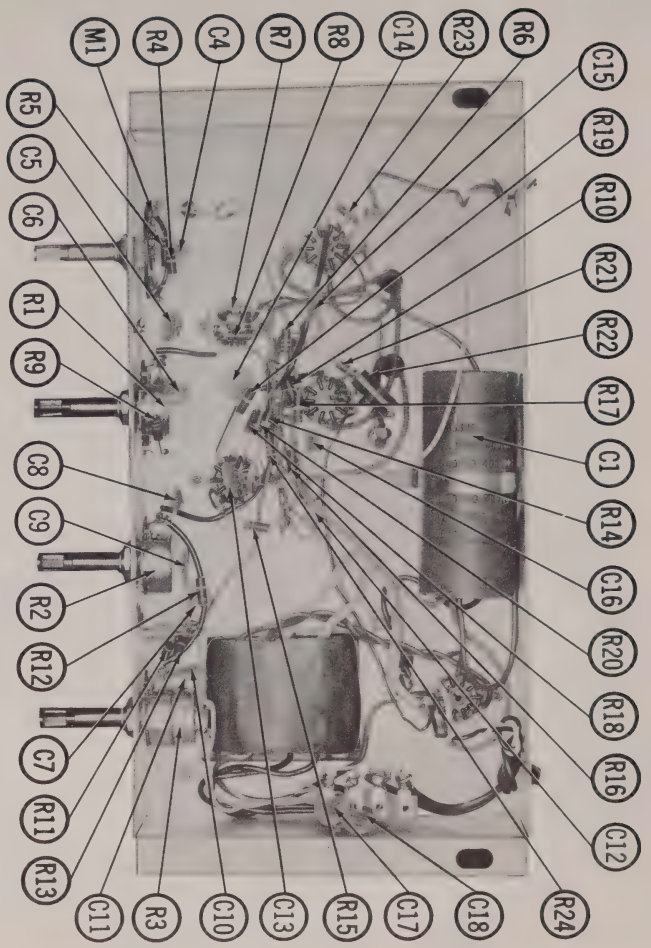
MISCELLANEOUS

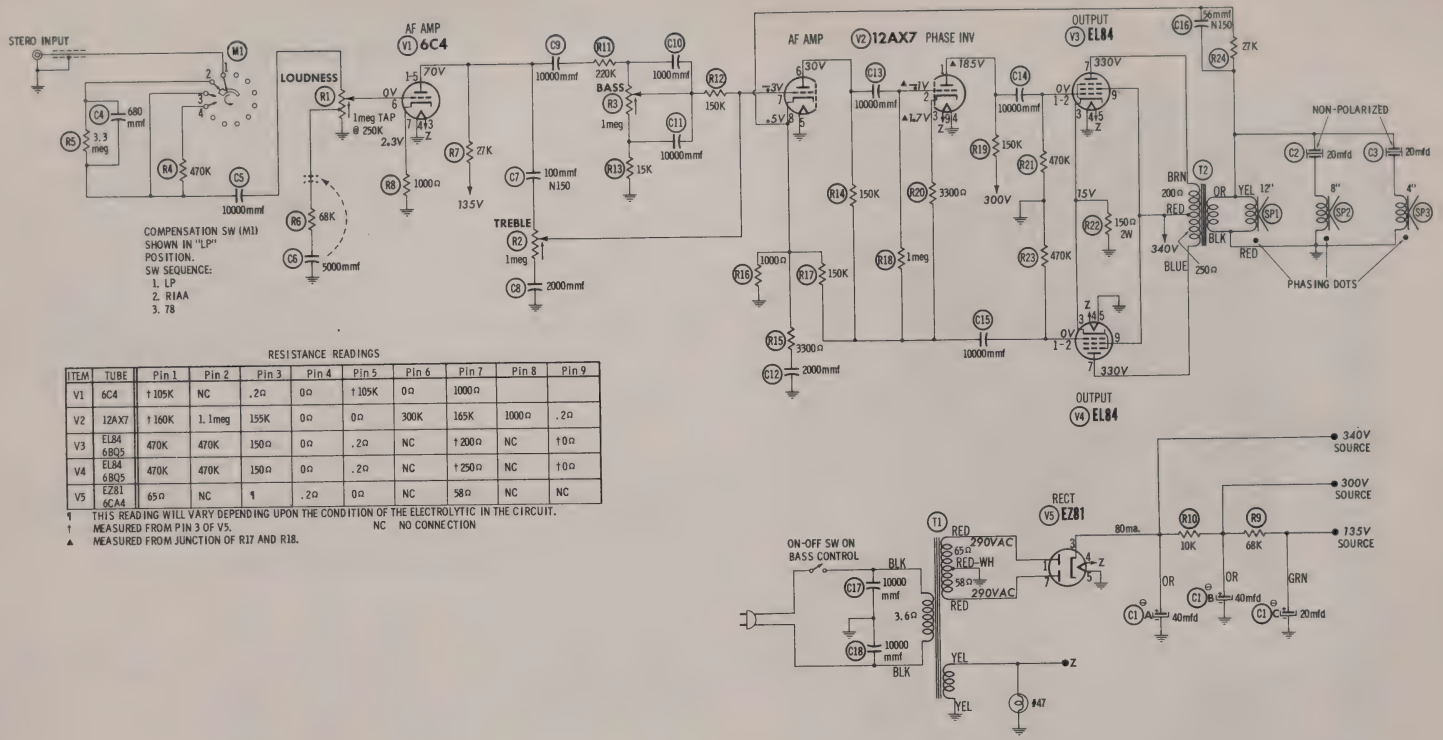
ITEM No.	PART NAME	DYNAMIC PART No.	NOTES
M1	Switch		Compensation (Rotary Wafer Type)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6C4	†105K	NC	.2Ω	0Ω	†105K	0Ω	1000Ω		
V2	12AX7	†160K	1.1meg	155K	0Ω	0Ω	300K	165K	1000Ω	.2Ω
V3	EL84 6BQ5	470K	470K	150Ω	0Ω	.2Ω	NC	†200Ω	NC	†0Ω
V4	EL84 6BQ5	470K	470K	150Ω	0Ω	.2Ω	NC	†250Ω	NC	†0Ω
V5	EZ81 6CA4	65Ω	NC	¶	.2Ω	0Ω	NC	58Ω	NC	NC

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 3 OF V5. NC NO CONNECTION
▲ MEASURED FROM JUNCTION OF R17 AND R18.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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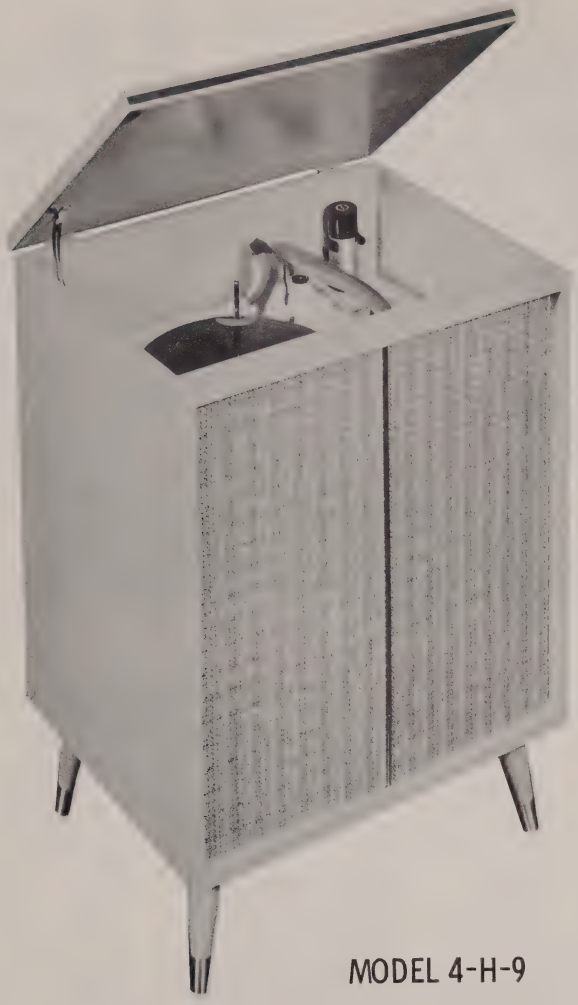
DYNAMIC MODEL AS-40R (Ch. 400)

PHOTOFACT® Folder

FIRESTONE MODELS 4-H-9, 13-R-1 (Code 11-9-459)

FIRESTONE MODELS 4-H-9, 13-R-1 (Code 11-9-459)



MODEL 4-H-9

FIRESTONE MODELS 4-H-9, 13-R-1 (Code 11-9-459)

TRADE NAME	Firestone Models 4-H-9, 13-R-1 (Code 11-9-459)
SUPPLIER	Firestone Tire and Rubber Co., 1200 Firestone Parkway, Akron 17, Ohio
TYPE SET	AC Operated 3 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	105-125 Volts AC, 60 Cycles RATING 28 Watts, 3 Amp @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE V-M 1201 - PHOTOFACT SET 436 FOLDER 18

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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JT795

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

TUBES

◆ CBS ◆	GENERAL ELECTRIC ◆	◆ RAYTHEON ◆	SYLVANIA ◆

ITEM No.	USE	TYPE
V1	Left Channel AF Amp - Right Channel AF Amp	12AX7

ITEM No.	USE	TYPE
V2	Left Channel Output	50EH5
V3	Right Channel Output	50EH5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	60	150	FB5925	PRS3800	BBRT84215	TCT3119	TDLT-7	TVA-3455	
B	40	150							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P1
C3	3300	(5000) *	BPD-0033	DD-332	BYA10D33	CCD-332	GP233	5HK-D33
C4	1500		BPD-0015	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C5	5000	(10000) *	BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C6	3300	(5000) *	BPD-0033	DD-332	BYA10D33	CCD-332	GP233	5HK-D33
C7	1500		BPD-0015	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C9	.25 400V		P488N-25		CUB4P25	4DP-5-254	GEM-4025	4TM-P25
C10	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4047	4TM-S47

*Alternate Value

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA FIRESTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	5meg		DCV5					Loudness, Right Channel
B	5meg							Loudness, Left Channel
R2A	2meg		DT-189					Tone, Left Channel
B	2meg							Tone, Right Channel
R3	1meg		B-188					Balance

RESISTORS

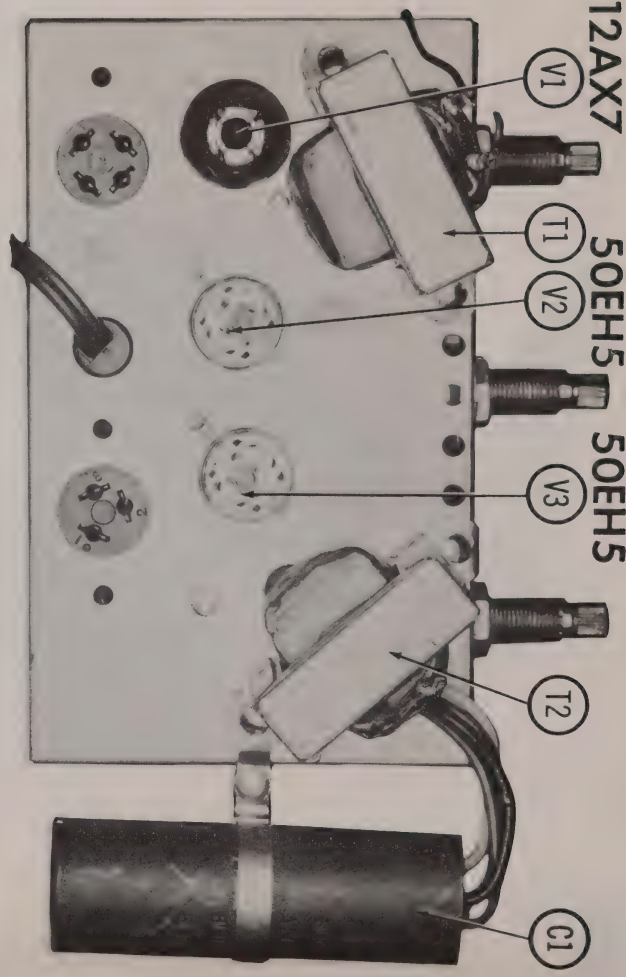
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R4	6.8meg	
R5	220K	
R6	560Ω	
R7	2200Ω 1W	
R8	68Ω	

ITEM No.	RATING	REMARKS
R9	10K	
R10	6.8meg	
R11	220K	
R12	560Ω	
R13	68Ω	

ITEM No.	RATING	REMARKS
R14	10K	
R15	150Ω 1W	
R16	33Ω 1W	
R17	33Ω 1W	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA FIRESTONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	3500Ω	6-8Ω	T-187							
		SEC. 2 55Ω								
T2	3500Ω	SEC. 1 6-8Ω	T-187							
		SEC. 2 55Ω								

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA FIRESTONE PART No.	QUAM PART No.	NOTES
SP1	8"	PM	6-8Ω	78015460-6	8A31Z8	
SP2	8"	PM	6-8Ω	78015460-6	8A31Z8	

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA FIRESTONE PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.060A	2E4 *	2E4 *	HA154 *	K200 *	SR200 *	*Silicon

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA FIRESTONE PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M2	* 106-1	70-TS		96					

* Type 13T may be used in some versions

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA FIRESTONE PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	REMARKS
M3	(78 RPM)		CRA-57 † or CRA-57D ♦	† Jewel ♦ Diamond
	(LP)		CRA-57X † or CRA-57XD †♦	

MISCELLANEOUS

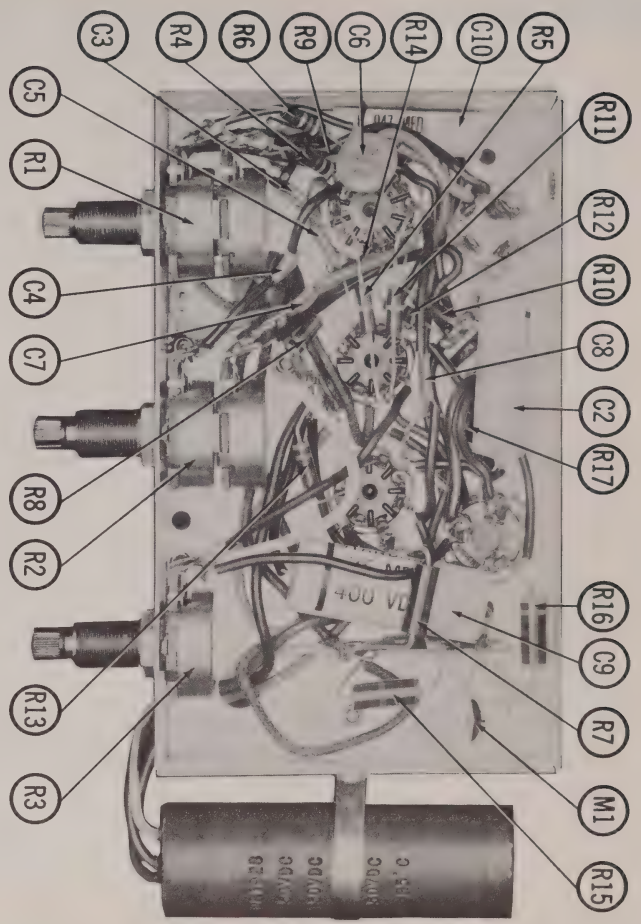
ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M4	Switch		Off-On (Part of Changer)
M5	Motor		Phono Drive (Part of Changer

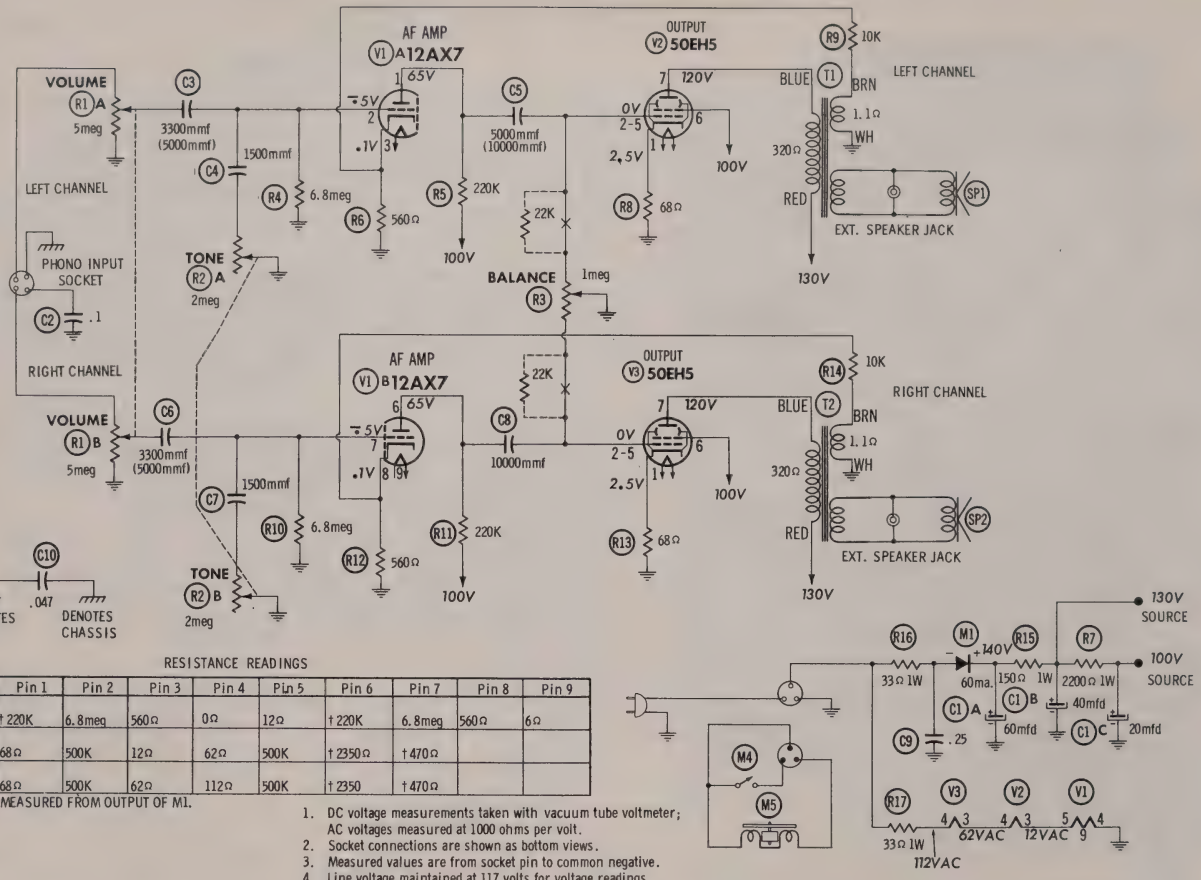
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knobs	R5925	

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†220K	6.8meg	560Ω	0Ω	12Ω	†220K	6.8meg	560Ω	6Ω
V2	50EH5	68Ω	500K	12Ω	62Ω	500K	†2350Ω	†470Ω		
V3	50EH5	68Ω	500K	62Ω	112Ω	500K	†2350	†470Ω		

† MEASURED FROM OUTPUT OF M1.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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FIRESTONE MODELS 4-H-9, 13-R-1 (Code 11-9-459)

PHOTOFACT® Folder with CIRCUITRACE®

LAFAYETTE MODEL FS-200

LAFAYETTE
MODEL FS-200

LAFAYETTE
MODEL FS-200

TRADE NAME	Lafayette Model FS-200		
SUPPLIER	Lafayette Radio, 165-08 Liberty Ave., Jamaica 33, N. Y.		
TYPE SET	Battery Operated Transistorized Portable AM Receiver		
POWER SUPPLY	9 Volts DC	RATING	4MA @ 9 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 — 1620KC		10MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1, A2, A3, A5.... GENERAL CEMENT #5097, 8727
WALSCO #2515
A4, A6..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4	"
3.	"	600KC	600KC	"	A5	"
4.	"	1400KC	Tune to 1400KC Signal.	"	A6	Adjust for maximum output while rocking tuning gang.

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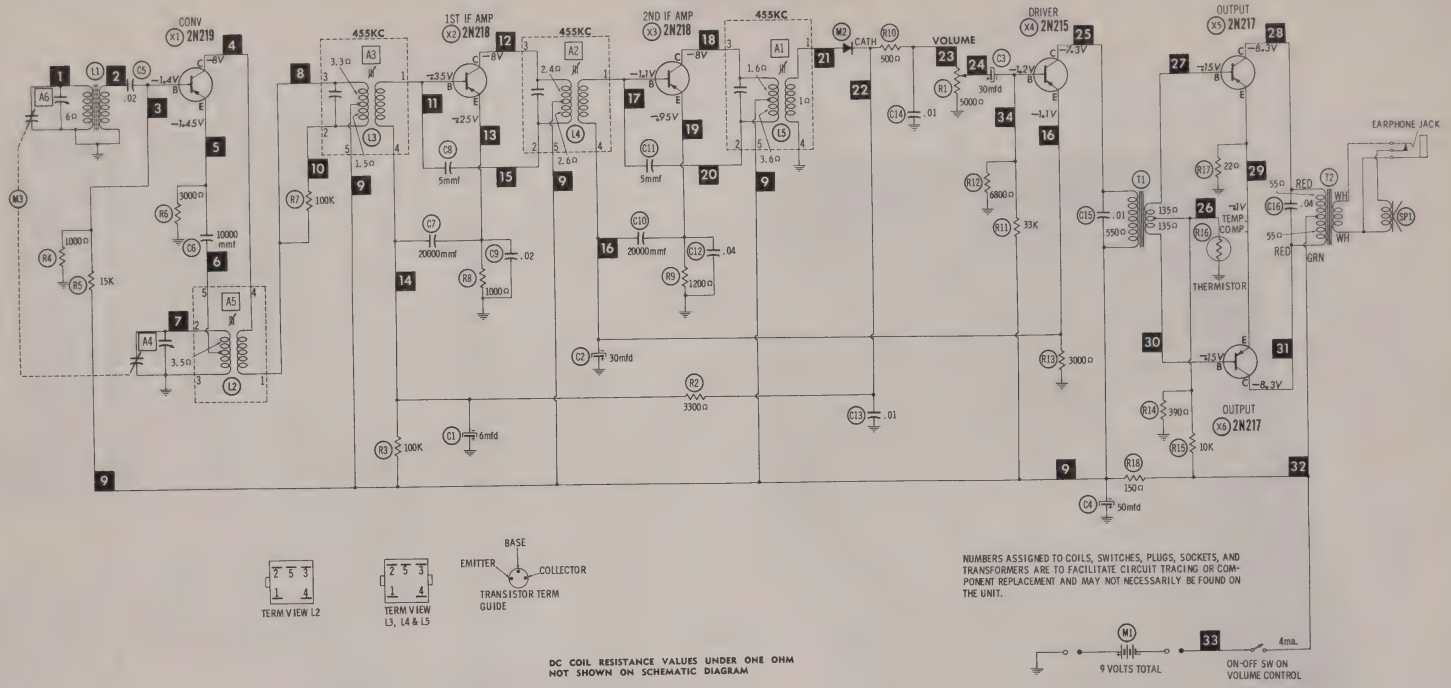
JF834

SET489 FOLDER 14



TERM VIEW L2

TERM VIEW L3, L4 & L5

TRANSISTOR TERM GUIDE

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE™

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LAFAYETTE
MODEL FS-200

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N219	Converter		2N219	2N486		PNP
X2	2N218	1st IF Amplifier		2N218	2N111A	2N218	PNP
X3	2N218	2nd IF Amplifier		2N218	2N111A	2N218	PNP
X4	2N215	Driver		2N215			PNP
X5	2N217	Output		2N217	2N631	2N217	PNP } Matched
X6	2N217	Output		2N217	2N631	2N217	PNP } Pair

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	LAFAYETTE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	6	6		XPP-6006	EC5-6	TT6X5	ML6-6	TE-1085	
C2	30	6		PWE6030	EC30-6	TT6X30	ML30-6	TE-1092	
C3	30	6		PWE6030	EC30-6	TT6X30	ML30-6	TE-1092	
C4	50	10		PWE10050	NLW50-10	TT10X50	ML50-15	TE-1119	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	.02 50V			DDM-203	H-05S2		TA-120	TG-S20
C6	10000		C80V103AM	DDM-103	H-05S1		TA-110	TG-S10
C7	20000		C80V203AM	DDM-203	H-05S2		TA-120	TG-S20
C8	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C9	.02 50V			DDM-203	H-05S2		TA-120	TG-S20
C10	20000		C80V203AM	DDM-203	H-05S5		TA-120	TG-S20
C11	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C12	.04 50V							
C13	.01 50V			DDM-103	WMF1S1E		TA-110	TG-S10
C14	.01 50V			DDM-103	WMF1S1E		TA-110	TG-S10
C15	.01 50V			DDM-103	WMF1S1E		TA-110	TG-S10
C16	.04 50V							

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	LAFAYETTE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4	B16-214					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	3300Ω	
R3	100K	
R4	1000Ω	
R5	15K	
R6	3000Ω	
R7	100K	

ITEM No.	RATING	REMARKS
R8	1000Ω	
R9	1200Ω	
R10	500Ω	
R11	33K	
R12	6800Ω	
R13	3000Ω	

ITEM No.	RATING	REMARKS
R14	390Ω	
R15	10K	
R16	Temp. Comp.	
R17	22Ω	
R18	150Ω	

PRINTED BOARD

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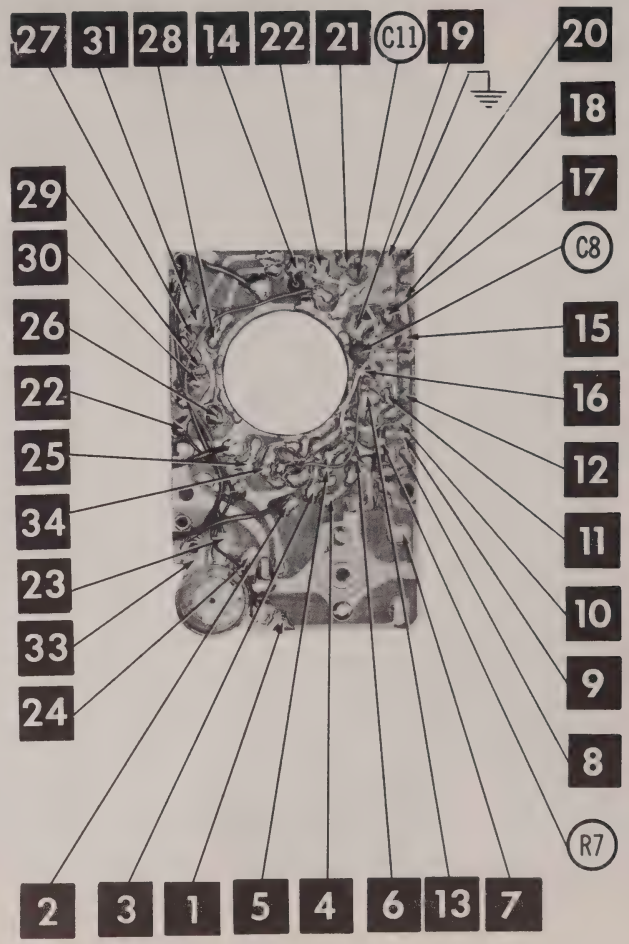


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		LAFAYETTE PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick							
L2	Osc. Coil							
L3	1st IF Trans.							
L4	2nd IF Trans.							
L5	3rd IF Trans.							

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	LAFAYETTE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1, 2	1	TRT-13	TR-39			TR-39		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	LAFAYETTE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	1100Ω CT	6-8Ω	TRT-14							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	LAFAYETTE PART No.	QUAM PART No.	
SP1	2 1/4"	PM	6-8Ω		22A06Z8	

BATTERIES

ITEM No.	VOLTAGE	LAFAYETTE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			2U6		216		M-1604	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		LAFAYETTE PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	B-28		1N60	1N60	1N60	Detector (Pigtail)

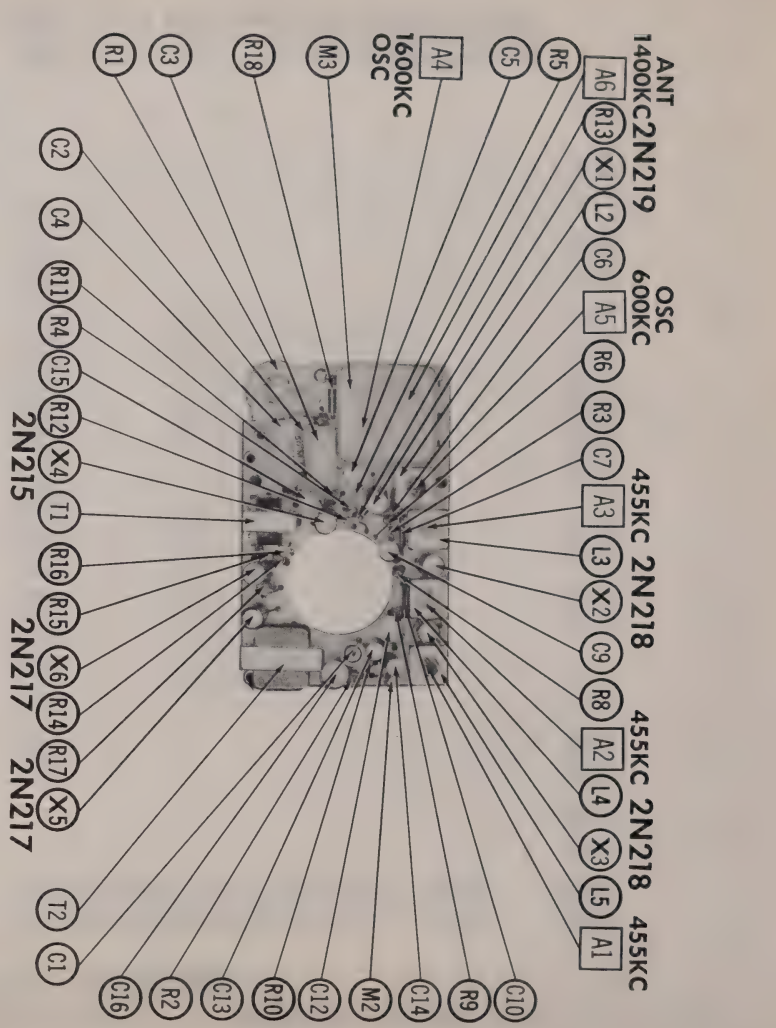
MISCELLANEOUS

ITEM No.	PART NAME	LAFAYETTE PART No.	NOTES
M3*	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

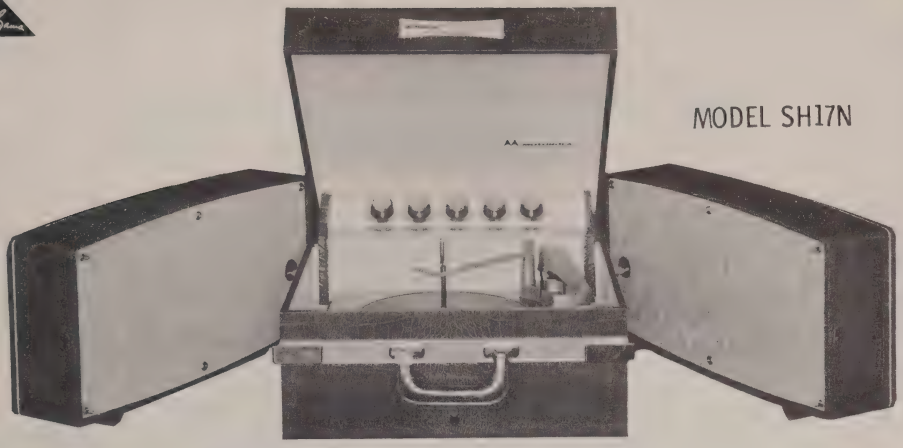
CHASSIS—TOP VIEW



PHOTOFACT® Folder

MOTOROLA MODELS SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)

MOTOROLA MODELS SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)



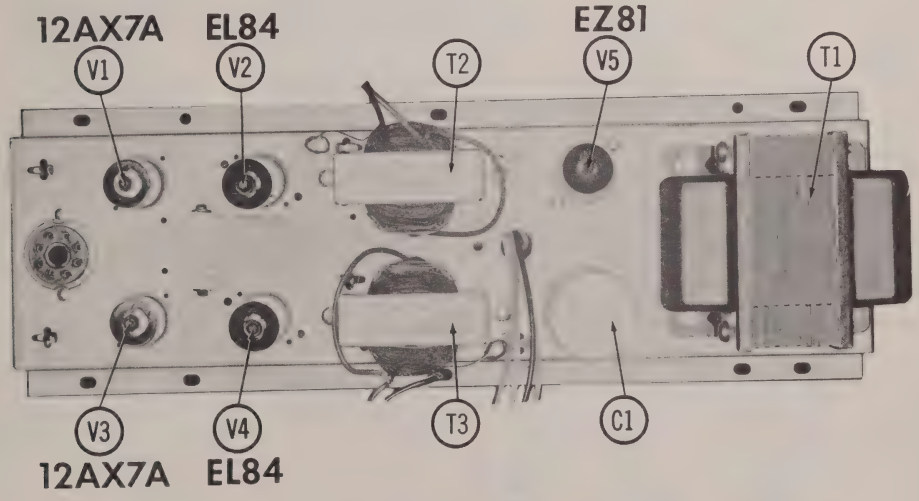
MODEL SH17N

MOTOROLA MODELS SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)

TRADE NAME	Motorola Models SH17E, SH17GL, SH17N, SH17S (Ch. HS-764); SK22B, SK22M (Ch. HS-766)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	AC Operated 5 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 62 Watts, .62 Amp @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER VM20RC USED IN MODELS SH17E, N, S or VM26RC USED IN MODEL SH17GL - SEE SIMILAR V-M 1201 - PHOTOFACT SET 436 FOLDER 18 OR RECORD CHANGER MANUAL RC-12.

FOR SERVICE INFORMATION ON RECORD CHANGER BR10RC USED IN MODELS SK22B, M - SEE SIMILAR MONARCH UA8 - PHOTOFACT SET 381 FOLDER 11 OR RECORD CHANGER MANUAL RC-11.



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SET 489 FOLDER 15

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	CBS / GENERAL ELECTRIC / RAYTHEON / SYLVANIA TYPE
V1	Left Channel AF Amp	12AX7A
V2	Left Channel Output	EL84/6BQ5
V3	Right Channel AF Amp	12AX7A
V4	Right Channel Output	EL84/6BQ5
V5	Rectifier	EZ81/6CA4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■40	350	23K642239	AFH4-04-50	D0034	FP420.38	TMQ-120	TVL-4635.3	
B	▲40	350							
C	40	350							
D	▲40	350							
C2	50	10	23B636685	XPP-100-50	BBR50-25	TT10X50	TD-50-25	TVA-1206	
C3	5	25NP	23B643970	PRS7405	BBR10-25 †	TCN5010		TVANS-1203.1	
C4	5	25NP	23B643970	PRS7405	BBR10-25 †	TCN5010		TVANS-1203.1	

† Use 2 units. Connect negative terminals together.
Connect positive terminals into circuit the same as the original non-polarized unit.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	10	NPO	10%		NPO-D110	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C6	5000				BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C7	220			(100) †	DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C8	1000		10%		DI-1000	DD-102	1R5D1	CCD-102	GP210	10TS-D10
C9	2000		10%		DI-2000		1R5D2	CCD-202	GP220	10TS-D20
C10	.02	200V			P288N-02	DD-203	CUB2S2	4DP-2-203	GEM-412	2TM-S2
C11	10000				BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C12	10	NPO	10%		NPO-D110	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C13	5000				BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C14	220			(100) †	DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C15	1000		10%		DI-1000	DD-102	1R5D1	CCD-102	GP210	10TS-D10
C16	2000		10%		DI-2000		1R5D2	CCD-202	GP220	10TS-D20
C17	.02	200V			P288N-02	DD-203	CUB2S2	4DP-2-203	GEM-412	2TM-S2
C18	10000				BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10

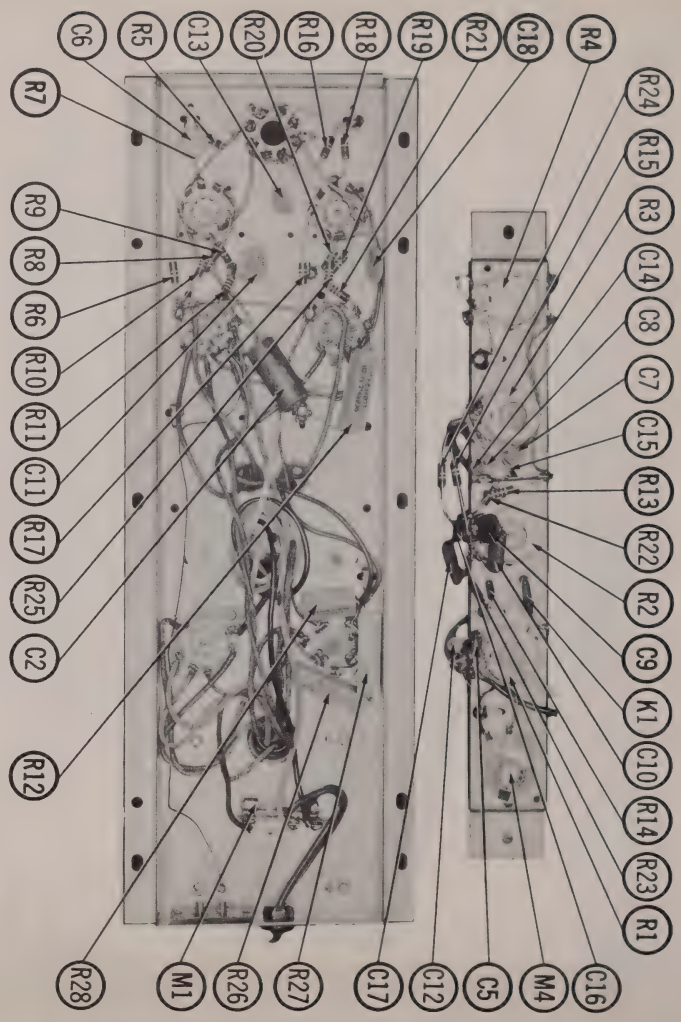
† Used in chassis HS-766

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg	½	18K644211					Loudness, Right Channel
	500K tap							
B	2meg	½						Loudness, Left Channel
	500K tap							
R2A	2meg	½	18A642217	B-76	AD47-2meg-Z		FA26A	Bass, Right Channel
B	2meg	½		SR-76	Not Req.		RU26A	Bass, Left Channel
C	Shaft			Not Req.	FS-3		CS3500	
R3A	2meg	½	18A642217	B-76	AD47-2meg-Z		FA26A	Treble, Right Channel
B	2meg	½		SR-76	Not Req.		RU26A	Treble, Left Channel
C	Shaft			Not Req.	FS-3		CS3500	
R4	700K *	½	18K644212					Balance

* Taps and stops @ 100K and 600K.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	820K	(470K) *
R6	150K	
R7	820Ω	
R8	150K	
R9	1800Ω	
R10	68K	(56K) ♦
R11	470K	
R12	82Ω 5W	* #17K634893

ITEM No.	RATING	REMARKS
R13	47K	(180K) *
R14	10K	(22K) *
R15	100K	
R16	820K	(470K) *
R17	150K	
R18	820Ω	
R19	150K	
R20	1800Ω	

ITEM No.	RATING	REMARKS
R21	470K	
R22	47K	(180K) *
R23	10K	(22K) *
R24	100K	
R25	68K	(56K) ♦
R26	150Ω 5W	#17K636326
R27	150Ω 5W	#17K636326
R28	1200Ω 5W	#17K644921

* Used in Ch. HS-766.
♦ Alternate Value
Motorola Part Number

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	Loudness Comp.	(2) 2000mmf, (2) 68K	51B644164	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
				MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
	PRI.	SEC. 1	SEC. 2							
T1	117V Ⓖ .62A	500VCT Ⓖ .095A	6.3V Ⓖ .9A	25K645709B ①						
	SEC. 3	SEC. 4	SEC. 5							
	6.3VCT Ⓖ 2.3A									

① Alternate Part #25K645109
Chassis HS-766 used Part #25C644086

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
			MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.								
T2	6000Ω	6-8Ω	25C644179-L①	24S14	A-2904②	AU-609	A-3823 ②	24S14	S-53X②	
T3	6000Ω	6-8Ω	25C644179-L①	24S14	A-3904②	AU-609	A-3823 ②	24S14	S-53X②	

① Alternate Part #25K645591
② Drill new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				MOTOROLA PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	6"	PM	6-8Ω	50K642464 *	8A3IZ7.3	* Used in Model SH17 Series only
SP2	4"	PM	10-12Ω	50C636446	4A1TZ10.6	† 2 Used in Model SK22 Series only
SP3	6"	PM	6-8Ω	50K642464 *	8A3IZ7.3	
SP4	4"	PM	10-12Ω	50C636446	4A1TZ10.6	
	8"	PM	6-8Ω	50D645498 †		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MOTOROLA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3A 125V S/B P/T			315003 (3A 125V)		MDV3	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA									
	MOTOROLA PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M2	59B642691 ♦	13T	Not Req	13	Not Req	A-44X	Not Req.	8TA4-S	N-8TA-S
	59K643765 *	13TX	Not Req.	13	Not Req.	A-44XDD	Not Req.	8TA4-D	N-8TA-D
	59K645704 ǂ	13TB	Not Req.	66 †	Not Req.			8TA4-S	N-8TA-S

♦ Sapphire, Model SH17 Series
* Diamond, Model SH17 Series
ǂ Model SK22 series
† Use mount PT-3

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	MOTOROLA PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M3	(Part of M2) (Model SH17)	W-204DS * or W-204DD-1 ♦	A44-X † or A44XSD * or A44XDD ♦	* Sapphire-diamond ♦ Diamond (dual) † Sapphire (dual)
	47K645703 † or 47K645702 * (Model SK22)	W-103STSS † or W-103STDS *	S-69X † or S-69XSD * or S-69XDD ♦	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Switch	40B642153	Stereo-Monaural (Rotary Wafer Type)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

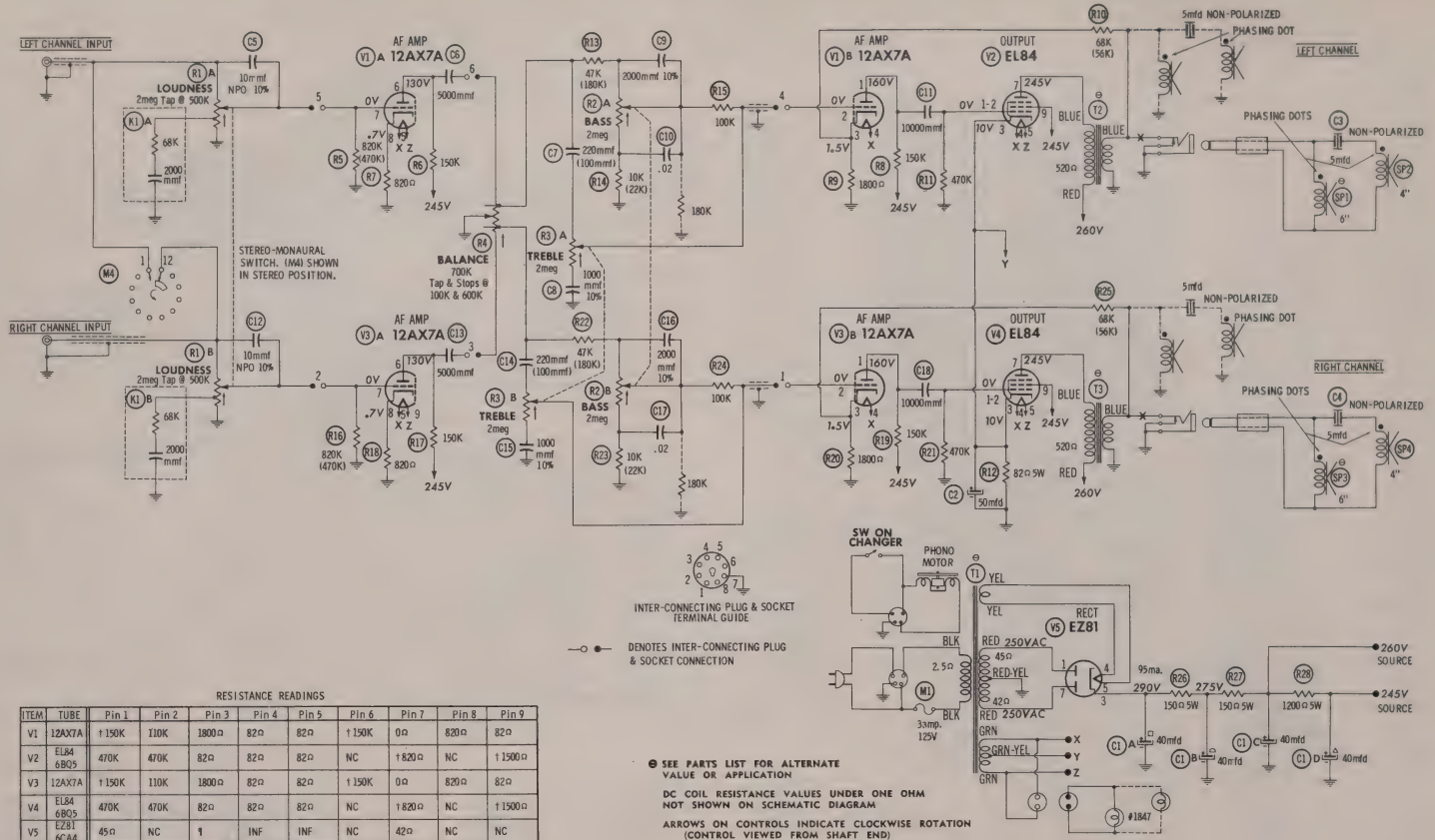
NAME	PART NO.	DESCRIPTION
Knob	36K644314	Loudness, Models SH17E, N, S
Knob	36K644317	Loudness, Model SH17GL
Knob	36K644308	Loudness, Models SK22B, M
Knob	36K644315	Bass and Treble, Models SH17E, N, S
Knob	36K644318	Bass and Treble, Model SH17GL
Knob	36K644309	Bass and Treble, Models SK22B, M
Knob	36K644304	Balance, Models SH17E, N, S
Knob	36K644305	Balance, Model SH17GL
Knob	36D644280	Balance, Models SK22B, M
Knob	36K644313	Function, Models SH17E, N, S
Knob	36K644316	Function, Model SH17GL
Knob	36K644310	Function, Models SK22B, M
Cabinet	16K644252	Model SH17E
Cabinet	16K644254	Model SH17GL
Cabinet	16E644251	Model SH17N
Cabinet	16K644253	Model SH17S
Cabinet	16K644185	Model SK22B
Cabinet	16E644184	Model SK22M
Cabinet Lid	16K644186	Model SK22B
Cabinet Lid	16K644187	Model SK22M
Handle	55K644394	Model SH17E
Handle	55K644370	Model SH17GL
Handle	55K644371	Model SH17N
Handle	55K644372	Model SH17S

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No.	8401
Phono Pick-up Arm Cable	Use BELDEN No.	8430 (Two Conductor - Twisted)

MOTOROLA MODELS SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)

FOLDER 15



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7A	†150K	110K	1800Ω	82Ω	82Ω	†150K	0Ω	820Ω	82Ω
V2	EL84 6BQ5	470K	470K	82Ω	82Ω	82Ω	NC	†820Ω	NC	†1500Ω
V3	12AX7A	†150K	110K	1800Ω	82Ω	82Ω	†150K	0Ω	820Ω	82Ω
V4	EL84 6BQ5	470K	470K	82Ω	82Ω	82Ω	NC	†820Ω	NC	†1500Ω
V5	EZ81 6CA4	45Ω	NC	¶	INF	INF	NC	42Ω	NC	NC

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 3 OF V5. NC NO CONNECTION

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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MOTOROLA MODELS SH17E, GL, N, S, SK22B, M (Ch. HS-764, HS-766)

PHOTOFACT® Folder

PHONOLA
MODEL 2759

PHONOLA
MODEL 2759

PHONOLA
MODEL 2759

TRADE NAME	Phonola Model 2759
MANUFACTURER	Waters Conley Co., Inc., Rochester, Minn.
TYPE SET	AC Operated 5 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	105-125 Volts AC, 60 Cycles RATING 44 Watts, .43 Amp @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER PART #13789 - SEE V-M 1201 - PHOTOFACT SET 436 FOLDER 18 OR RECORD CHANGER MANUAL RC-12

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 489 FOLDER 16

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆			◆ RAYTHEON ◆ SYLVANIA ◆		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 AF Amp	6AU6A	V3	Channel 2 AF Amp	6AU6A
V2	Channel 1 Output	6AQ5	V4	Channel 2 Output	6AQ5
			V5	Rectifier	6X4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	PHONOLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	▲30	350	13235	AFH4-66	DO890		TMQ-73	TVL-4712	
B	■15	350							
C	▲25	25							
D	25	25							
C2	4	10AC	12961	PRS7405	BBR10-50 †	TCN504		TVANS1110 *	
C3	4	10AC	12961	PRS7405	BBR10-50 †	TCN504		TVANS1110 *	

*Not normally in distributor's stock. Available thru distributor on order to manufacturer.
†Use 2 units. Connect negative terminals together.
Connect positive terminals into circuit the same as the original non-polarized unit.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C5	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C7	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C8	2200		BPD-0022	DD-222	BYA10D22	CCD-222	GP222	5HK-D22
C9	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C10	.01	400V	P488N-01	D6-103	CUB4S1	4DP-1-103	GEM411	4TM-S1

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHONOLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	5meg		13229	B-88	AD47-5meg-S		FA56A	Loudness, Channel 1
B	5meg			SR-88	Not Req.		RU56A	Loudness, Channel 2
C	Shaft			Not Req.	KSS-3		CS3500	
R2A	5meg		13229	B-88	AD47-5meg-S		FA56A	Bass, Channel 1
B	5meg			SR-88	Not Req		RU56A	Bass, Channel 2
C	Shaft			Not Req	KSS-3		CS3500	
R3A	2meg		13228	B-76	AD47-2meg-Z		FA26A	Treble, Channel 1
B	2meg			SR-76	Not Req		RU26A	Treble, Channel 2
C	Shaft			Not Req	KSS-3		CS3500	
R4A	1meg		13501	B-69	A47-1meg-S	Q11-137	U54	Balance
B	Shaft			Not Req	KSS-3	Not Req	Not Req.	

RESISTORS

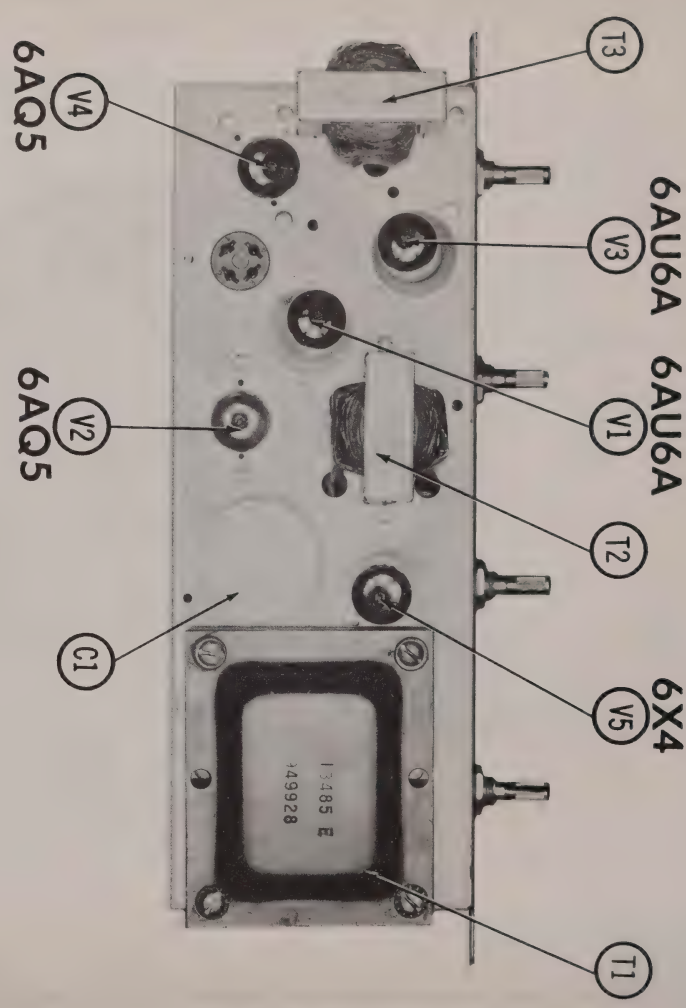
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	2.2meg	
R6	270K	
R7	10meg	
R8	270K	
R9	560Ω	
R10	10K 1W	

ITEM No.	RATING	REMARKS
R11	330Ω 1W	
R12	39K	
R13	270K	
R14	10meg	
R15	270K	
R16	27K	

ITEM No.	RATING	REMARKS
R17	100K	
R18	560Ω	
R19	330Ω 1W	
R20	39K	
R21	100Ω 1W	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	PHONOLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ② .43A	480VCT① .065A	③ 6.3VCT ③ 2.1A	13485E ①	22R00 ②			PM8404②	22R00②	R-88 ②

① Alternate Part #13485

②Tape 5V Winding, and CT on 6.3V Winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	PHONOLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4400Ω	3-4Ω	13342C ①	24S51	A-2930	AU-601	A-3877	24S51	S-3X	
T3	4400Ω	3-4Ω	13342C ①	24S51	A-2930	AU-601	A-3877	24S51	S-3X	

① Alternate Part #13342

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	PHONOLA PART No.	QUAM PART No.	
SP1	6"	PM	3-4Ω	12963	6A21	
SP2	4"x6"	PM	3-4Ω	12712	46A07	
SP3	6"	PM	3-4Ω	12963	6A21	
SP4	4"x6"	PM	3-4Ω	12712	46A07	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								
	PHONOLA PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		SONOTONE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M1	WC-13376 (Includes M2)	13TB		26S	S1-1 S3-1			8TA4-S	N-STA-S

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	PHONOLA PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	
M2	WC13377	W-103STSS * or W-103STDS † or W-103SDD-1 ♦	S-71X * or S-71XSD † or S-71XDD ♦	* Dual Sapphire † Dual Sapphire and Diamond ♦ Dual Diamond

CABINETS & CABINET PARTS

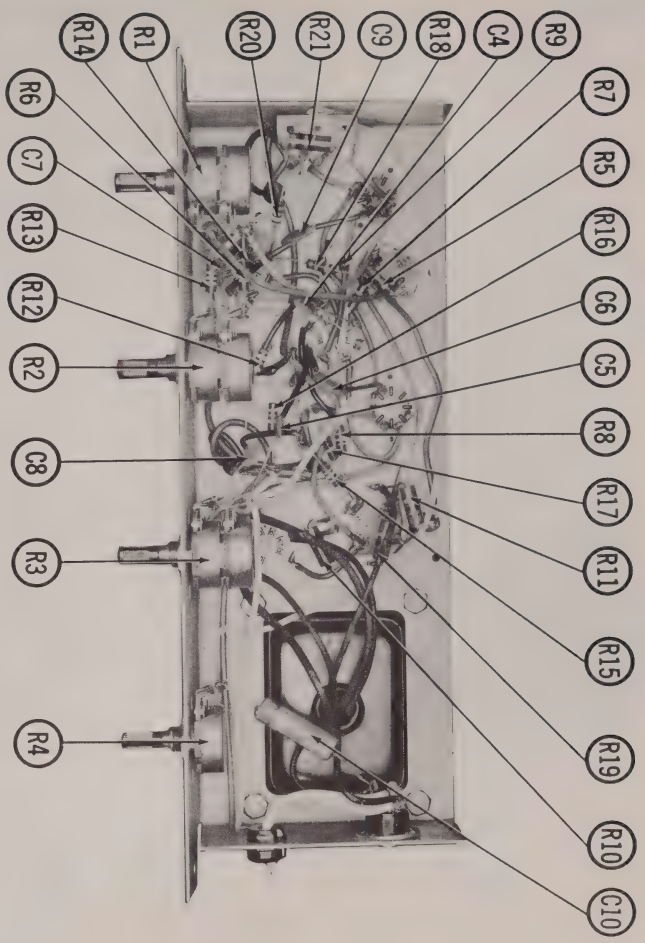
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

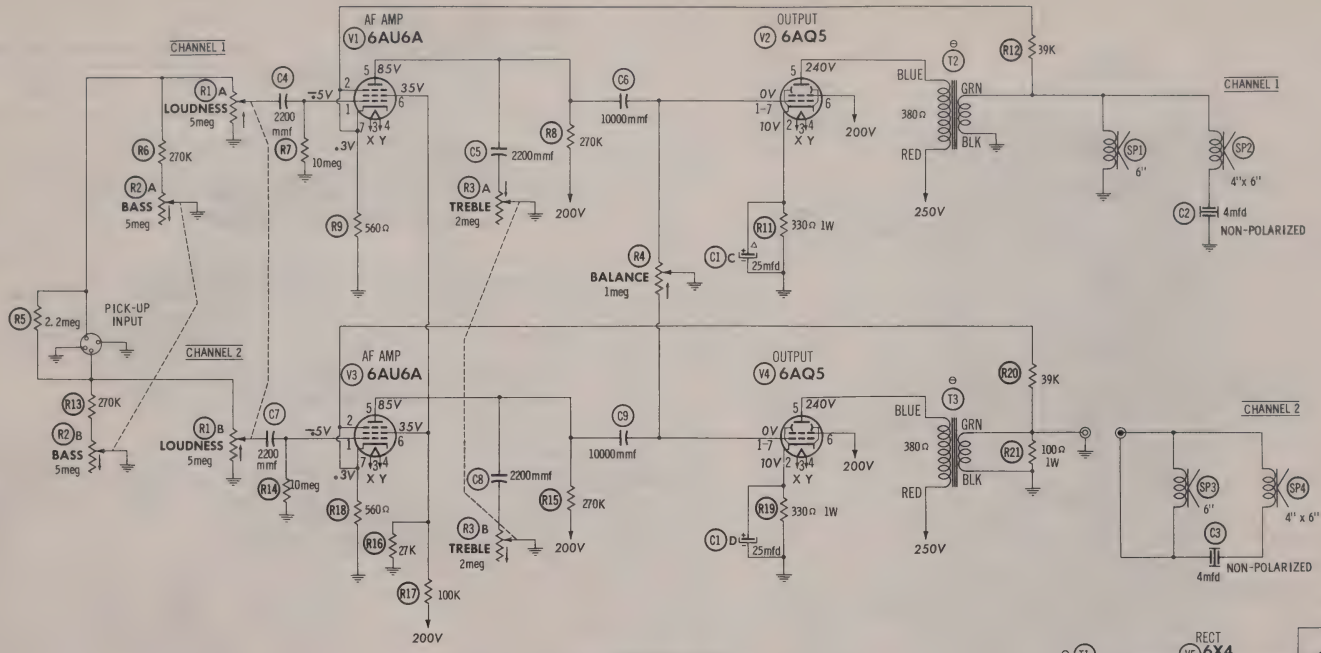
NAME	PART NO.	DESCRIPTION
Knob	13440-8E	Loudness, Bass, Treble, and Balance
Cabinet	13794	Assembly

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	6AU6A	10meg	560Ω	.3Ω	.3Ω	†280K	†80K	560Ω
V2	6AQ5A	500K	330Ω	.3Ω	.3Ω	†380Ω	†10K	500K
V3	6AU6A	10meg	560Ω	.3Ω	.3Ω	†280K	†80K	560Ω
V4	6AQ5A	500K	330Ω	.3Ω	.3Ω	†380Ω	†10K	500K
V5	6X4	80Ω	NC	.3Ω	.3Ω	NC	90Ω	¶

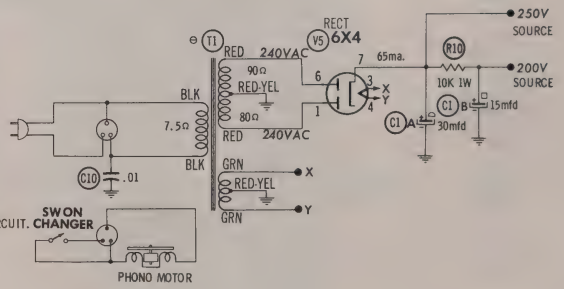
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



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PHONOLA MODEL 2759

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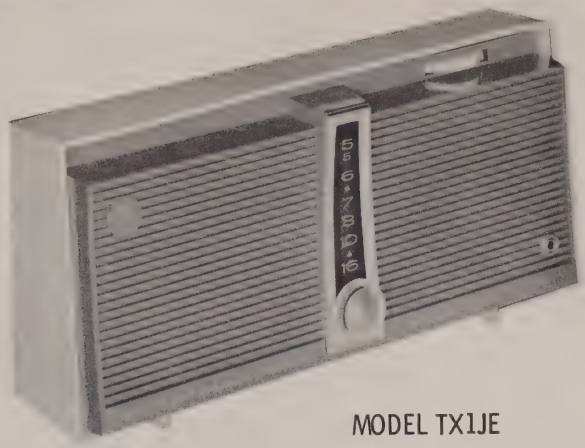
RCA VICTOR MODELS TX1HE, TX1K, TX1JE (Ch. RC-1196A)

RCA VICTOR MODELS TX1HE, TX1K, TX1JE (Ch. RC-1196A)



MODEL TX1JE

TRADE NAME	RCA Victor Models TX-1HE, TX-1K, TX-1JE (Ch. RC-1196A)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N. J.
TYPE SET	Battery Operated Transistorized AM Receiver
POWER SUPPLY	4.5 Volts DC
TUNING RANGE—BROADCAST 540-1600KC	RATING 6MA @ 4.5 Volts DC (No Signal, Minimum Volume) 20MA @ 4.5 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A6 GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

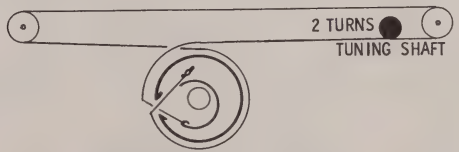
A4, A5 GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	High side thru .01 mfd. to antenna stator lug of tuning gang. Low side to chassis.	455KC (400~ mod.)	Tuning gang fully open	Across voice coil	A1, A2 A3	Adjust for maximum output.
2	Loop	1620 KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3	"	1400 KC	Tune to 1400 KC signal	"	A5	Adjust for maximum output while rocking tuning gang.
4	"	600 KC	Tune to 600 KC signal	"	A6	"

DISASSEMBLY

1. Open battery compartment by pressing on section of case marked ""Press Here To Open", and lifting up. Remove batteries.
2. Remove 2 screws located inside battery compartment.
3. Open case at bottom and disengage lip at top of case.

DIAL CORD STRINGING



TUNING GANG FULLY CLOSED

RCA VICTOR MODELS TX1HE, TX1K, TX1JE (Ch. RC-1196A)

SET 489 FOLDER 17

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JG765

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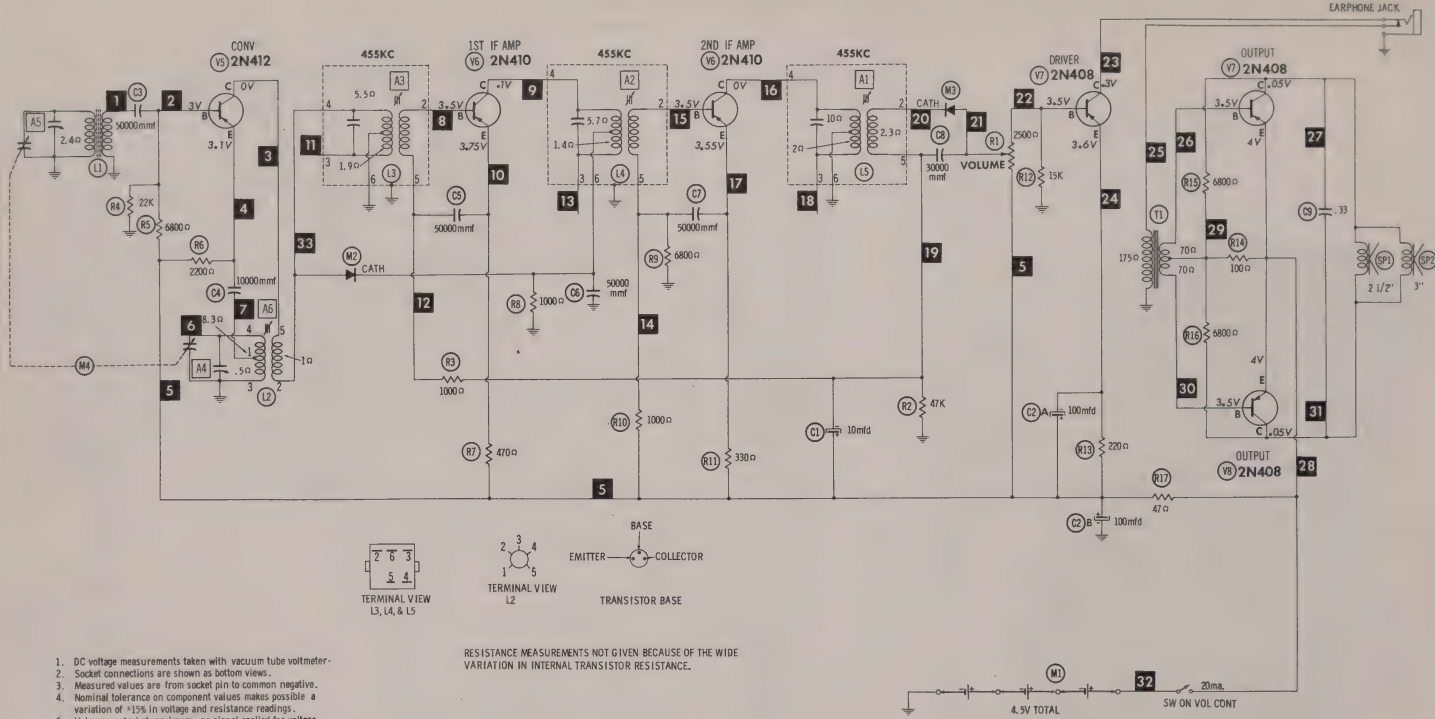

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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with CIRCUITRACE
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RCA VICTOR MODELS TX1HE, TX1K, TX1JE (Ch. RC-1196A)

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N412	Converter		2N412	2N486	2N412	PNP
X2	2N410	1st IF Amplifier		2N410	2N483	2N410	PNP
X3	2N410	2nd IF Amplifier		2N410	2N483	2N410	PNP
X4	2N408	Driver		2N408	2N362	2N408	PNP
X5	2N408	Output		2N408	2N633	2N408	PNP) Matched Pair
X6	2N408	Output		2N408	2N633	2N408	PNP)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	RCA VICTOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	10	106114	PWE10010	NLW10-15	TT12X10	ML10-15	TE-1114	
C2A	100	10	108151	BC1D10X8080	ECPAP7	TT15X100			
B	100	10				TT15X100			

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	50000		BPD-05	DD-503	H-05S5	1DP-2-503	GP150	5HK-S50	
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10	
C5	50000		BPD-05	DD-503	H-05S5	1DP-2-503	GP150	5HK-S50	
C6	50000		BPD-05	DD-503	H-05S5	1DP-2-503	GP150	5HK-S50	
C7	50000		BPD-05	DD-503	H-05S5	1DP-2-503	GP150	5HK-S50	
C8	30000		BPD-03	DD-303	BYB6S3	1DP-1-303	GP130	5HK-S30	
C9	.33	50V	P123NN-33		WFM1P33E		GEM-2033	118P33402S2	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA VICTOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	2500Ω	½	108581					Volume and Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	47K	
R3	1000Ω	
R4	22K	
R5	6800Ω	
R6	2200Ω	
R7	470Ω	

ITEM No.	RATING	REMARKS
R8	1000Ω	
R9	6800Ω	
R10	1000Ω	
R11	330Ω	
R12	15K	
R13	220Ω	

ITEM No.	RATING	REMARKS
R14	100Ω	
R15	6800Ω	
R16	6800Ω	
R17	47Ω	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		RCA VICTOR PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	108318	14-9005	14-9005				
L2	Osc. Coil	108160						
L3	1st IF Trans	108157						
L4	2nd IF Trans	108158						
L5	3rd IF Trans	108159						

PRINTED BOARD

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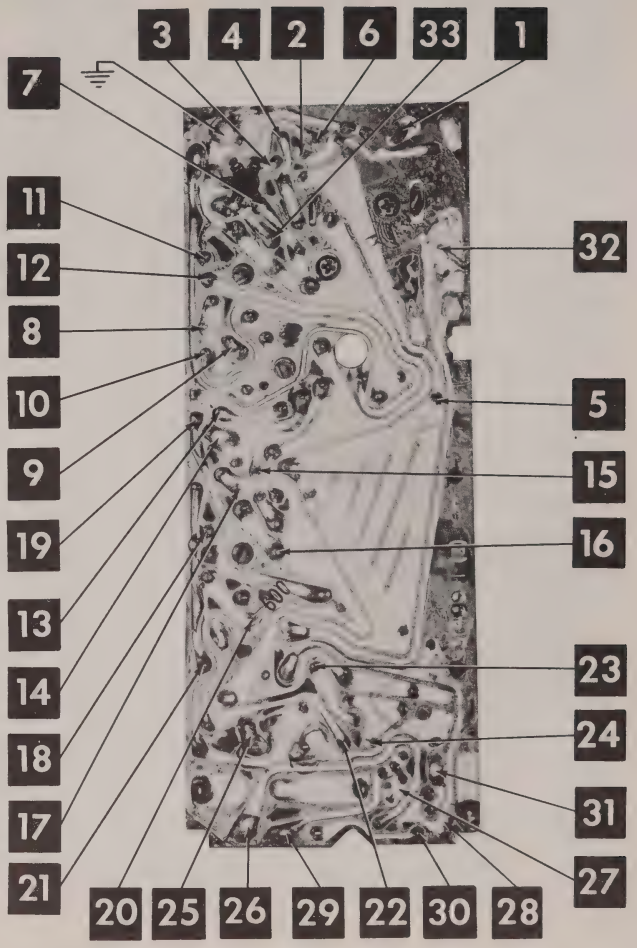


RCA VICTOR MODELS TX1H3E, TX1K, TX1JE (Ch. RC-1196A)

FOLDER 17

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA VICTOR PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1	1	108164						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA VICTOR PART No.	QUAM PART No.	
SP1	3½"	PM	130Ω CT	108163		
SP2	3"	PM	130Ω CT	108585		

BATTERIES

ITEM No.	VOLTAGE	RCA VICTOR PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	VS335 * or VS035 *		1 *		935 *		M-14R *	*3 Required

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA VICTOR PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		101615	1N60	1N60	1N60	Overload (pigtail)
M3		101615	1N60	1N60	1N60	Detector (pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M4	Tuning Cap Printed Board Earphone	108564 108170 RK-219A	2 Gang (Ant 8.8-131.9mmf, Osc 7.7-85.9mmf) Less Antenna, Tuning Cap, Volume Control, Driver Transformer, and Transistors

CABINETS & CABINET PARTS

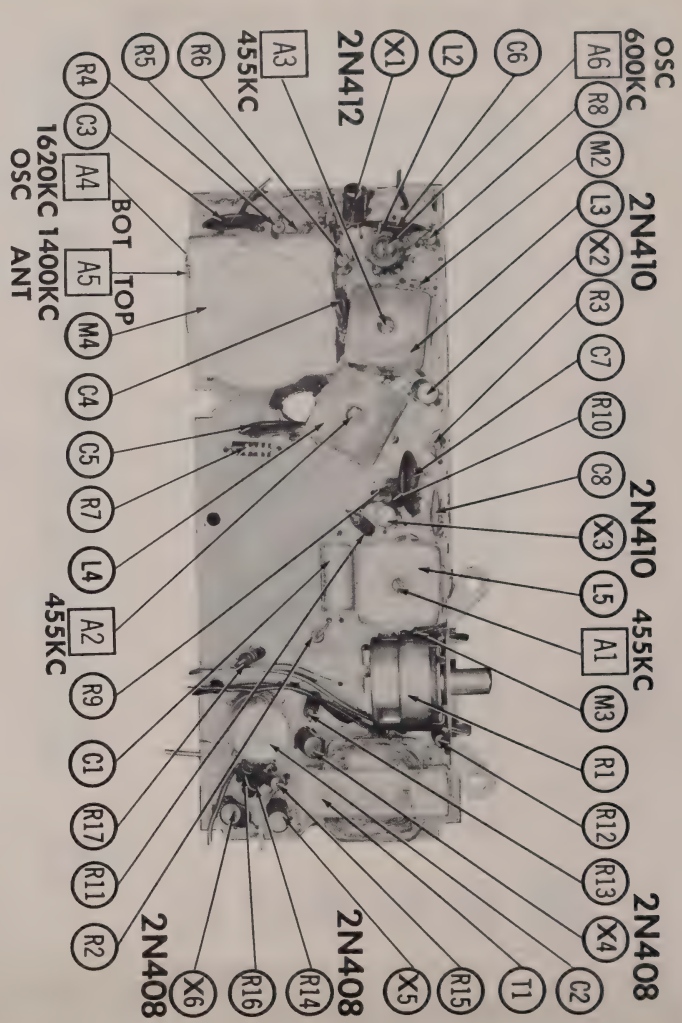
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	108592	Tuning
Knob	108319	Volume, Model TX-1JE, TX-1HE
Knob	108590	Volume, Model TX-1K
Dial	108586	Tuning, Model TX-1JE, TX-1HE
Dial	108587	Tuning, Model TX-1K
Pointer	108580	
Cabinet	Y7088	Model TX-1HE
Cabinet	Y7087	Model TX-1JE
Cabinet	Y7086	Model TX-1K

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



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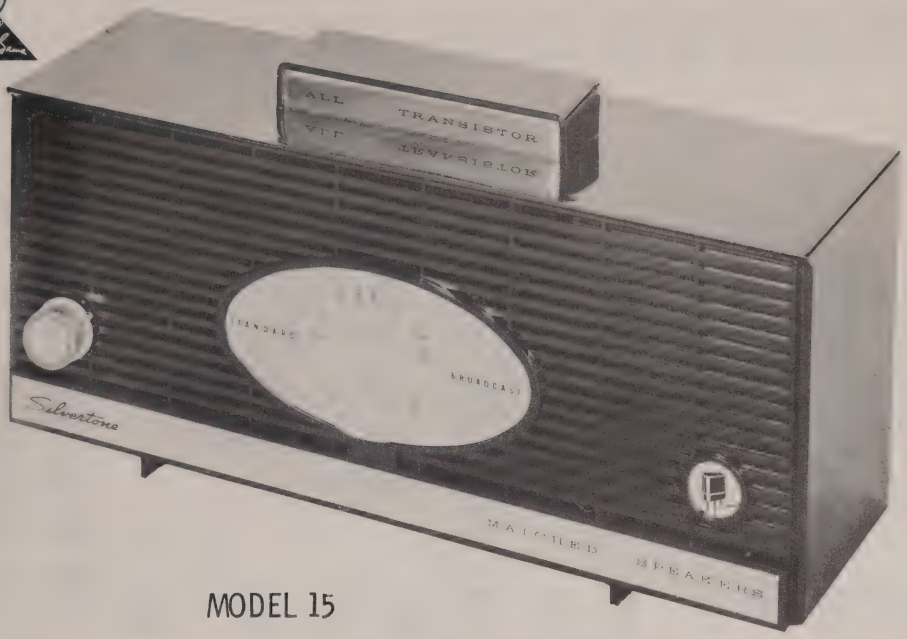
SILVERTONE MODELS 15, 16, 17, 18 (Ch. 132.48700)

SILVERTONE MODELS 15, 16, 17, 18 (Ch. 132.48700)



MODEL 15

TRADE NAME	Silvertone Models 15, 16, 17, 18 (Ch. 132.48700)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC
RATING	7MA@9 Volts DC (No Signal, Minimum Volume) 15MA@9 Volts DC (Signal, Normal Volume.)
TUNING RANGE-BROADCAST	540-1670 KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A4, A5.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A6.....GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	High side thru .05mfd to antenna stator lug of tuning gang. Low side to chassis	455 KC (400∿ mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3	Adjust for maximum output.
2	Loop	1670 KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3	"	1400 KC	Tune to 1400 KC signal	"	A5	"
4	"	600 KC	600 KC	"	A6	If necessary, adjust for maximum output.

SET489 FOLDER 18

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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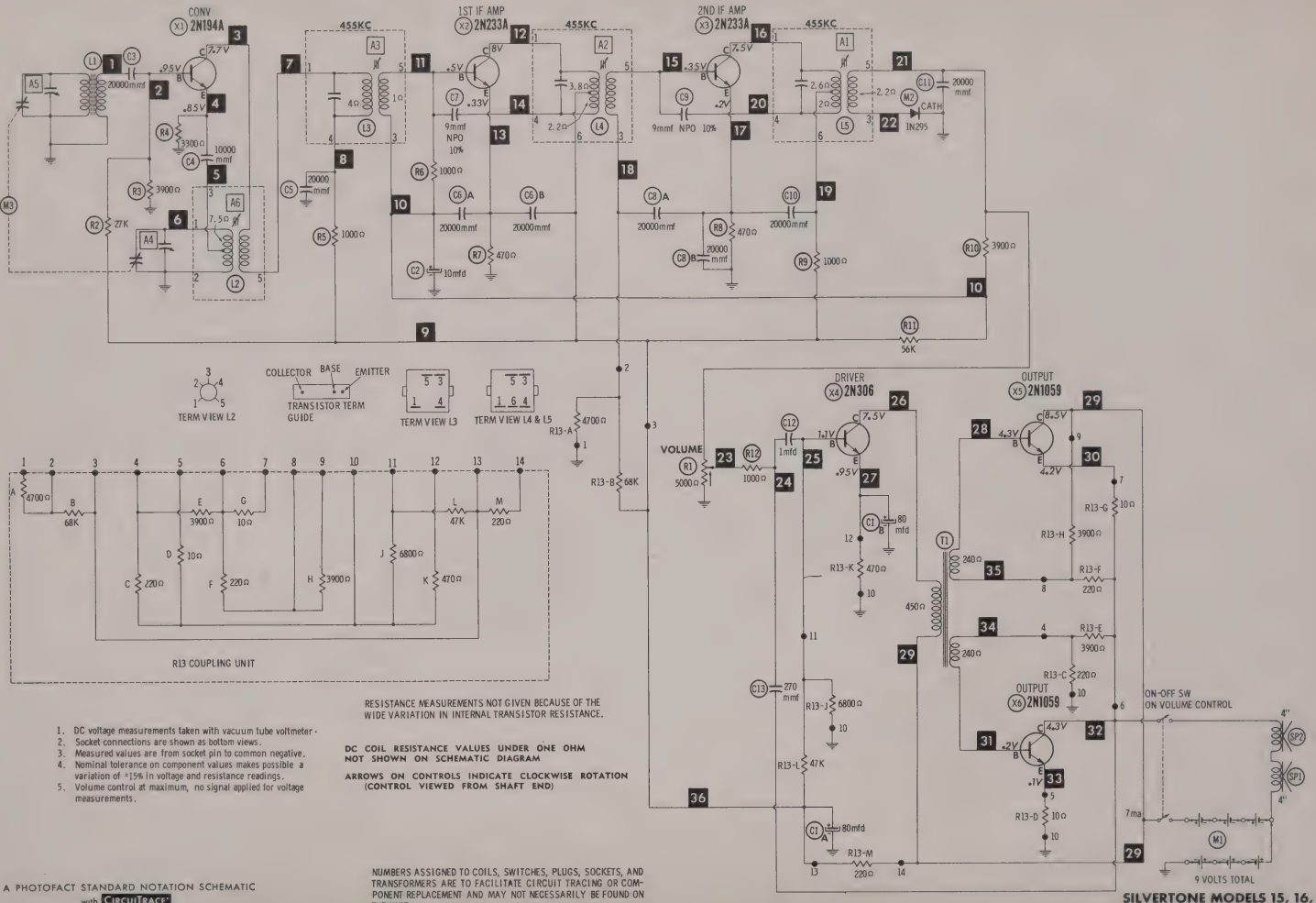

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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SILVERTONE MODELS 15, 16, 17, 18 (Ch. 132.48700)

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N194A	Converter	2N438		2N1366	2N194A	NPN
X2	2N233A	1st IF Amplifier	2N438		2N1367	2N233A	NPN
X3	2N233A	2nd IF Amplifier	2N438		2N1367	2N233A	NPN
X4	2N306	Driver	2N306	2N649		2N306	NPN
X5	2N1059	Output	2N444	2N649		2N1059	NPN
X6	2N1059	Output	2N444	2N649		2N1059	NPN

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	80	12	44397-3	BCD10X8080	ECPAN14		TDLD-3	VL-2350	
B	80	12							
C2	10	10	44396-4	PWE10010	ECPB408	TT12X10	ML10-15	TE-1114	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C5	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C6A	20000		BPD-2X02	DD-203	BYB6S2	CCD-203	GP120	5HK-2S20
B	20000			DD-203	BYB6S2	CCD-203	GP120	
C7	9 NPO 10%		NPO-D10	DTZ-10	C10V9C	CCTO-100	CNO-410	10TCC-Q10
C8A	20000		BPD-2X02	DD-203	BYB6S2	CCD-203	GP120	5HK-2S20
B	20000			DD-203	BYB6S2	CCD-203	GP120	
C9	9 NPO 10%		NPO-D10	DTZ-10	C10V9C	CCTO-100	CNO-410	10TCC-Q10
C10	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C11	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C12	1mfd			UK-105	MP2W1		GEM-21	HY-135
C13	270		D1270	DD-270	L10T27	CCD-271	GP327	10TS-T27

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	5000Ω	½	47500-3	B-11	A47-5000-S	Q13-114	U12	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KR-2	SWE-20	76-2	US-27	Power Off On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	27K	
R3	3900Ω	
R4	3300Ω	
R5	1000Ω	
R6	1000Ω	
R7	470Ω	
R8	470Ω	
R9	1000Ω	

ITEM No.	RATING	REMARKS
R10	3900Ω	Note 1
R11	56K	
R12	1000Ω	
R13A	4700Ω	
B	68K	
C	3900Ω	
D	220Ω	
E	470Ω	

ITEM No.	RATING	REMARKS
R13F	6800Ω	Note 1
G	3900Ω	
H	220Ω	
I	10Ω	
J	10Ω	
K	47K	
L	220Ω	

Note 1. Silvertone Part #47354-1.

PRINTED BOARD

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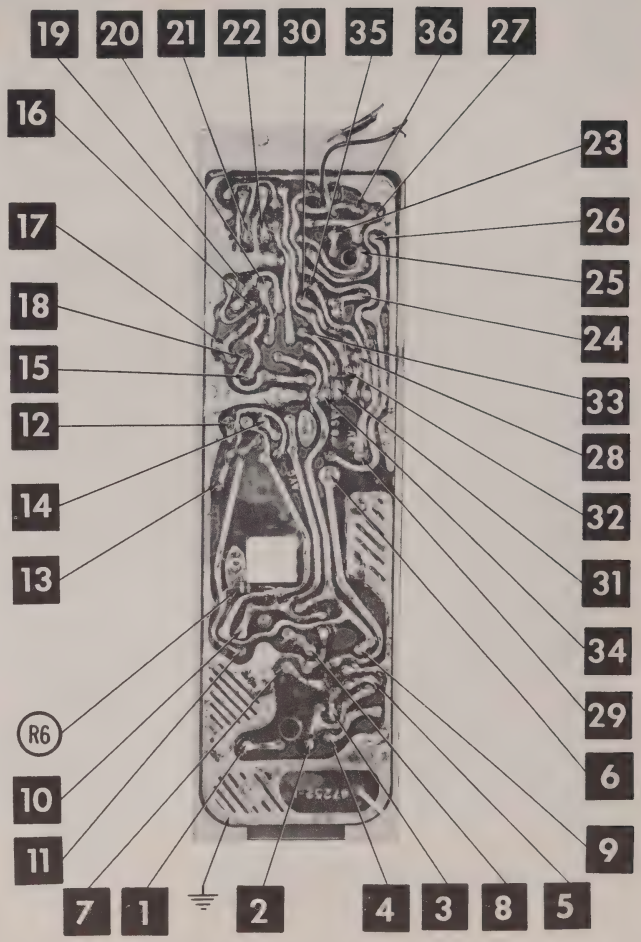


SILVERTONE MODELS 15, 16, 17, 18 (Ch. 132.48700)

FOLDER 18

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		SILVERTONE PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	46861-3						
L2	Osc Coil	45763-8						
L3	1st IF Trans	45900-11						
L4	2nd IF Trans	45900-12						
L5	3rd IF Trans	45900-13						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	L.5	1	45604-4						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SILVERTONE PART No.	QUAM PART No.	
SP1	4"	PM	16-18Ω	45600-9	4AIRZ16	
SP2	4"	PM	16-18Ω	45600-9	4AIRZ16	

BATTERIES

ITEM No.	VOLTAGE	SILVERTONE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	6445 *		230 *		A100 *		M-13R *	* 6 Required

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		SILVERTONE PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295		1N295	1N295	1N295	Detector (Pigtail)

MISCELLANEOUS

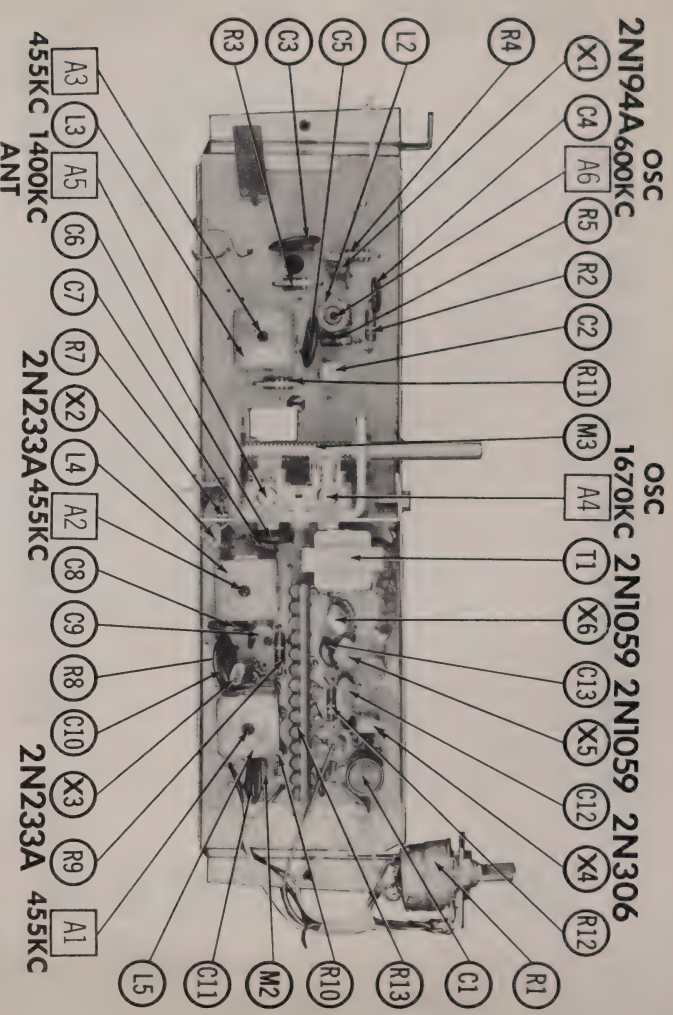
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Tuning Cap	47314	2 Gang
	Printed Board	47252-1	

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	47198	Tuning
Knob	47197	Volume
Cabinet	47256-48	Assembly, Model 15
Cabinet	47256-107	Assembly, Model 16
Cabinet	47256-96	Assembly, Model 17
Cabinet	47256-83	Assembly, Model 18
Rear Cover	47263-48	Model 15
Rear Cover	47263-107	Model 16
Rear Cover	47263-96	Model 17
Rear Cover	47263-83	Model 18
Battery Door	47286-48	Model 15
Battery Door	47286-107	Model 16
Battery Door	47286-96	Model 17
Battery Door	47286-83	Model 18

CHASSIS—TOP VIEW



PHOTOFACT® Folder with CIRCUITRACE®

SILVERTONE MODELS 206, 207 (Ch. 132.45103)

SILVERTONE MODELS 206, 207 (Ch. 132.45103)

MODEL 206

SILVERTONE MODELS 206, 207 (Ch. 132.45103)

TRADE NAME	Silvertone Models 206, 207 (Ch. 132.45103)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC
TUNING RANGE-BROADCAST	535-1670 KC RATING 12MA @ 9 Volts DC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A4, A5..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A6..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	High side thru .05mfd to antenna stator lug of tuning gang. Low side to chassis.	455 KC (400~ mod.)	Tuning gang fully open	Across voice coil	A1, A2 A3	Adjust for maximum output.
2	Loop	1670 KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400 KC	Tune to 1400 KC signal	"	A5	Adjust for maximum output while rocking tuning gang.
4	"	600 KC	600 KC	"	A6	Adjust for maximum output.

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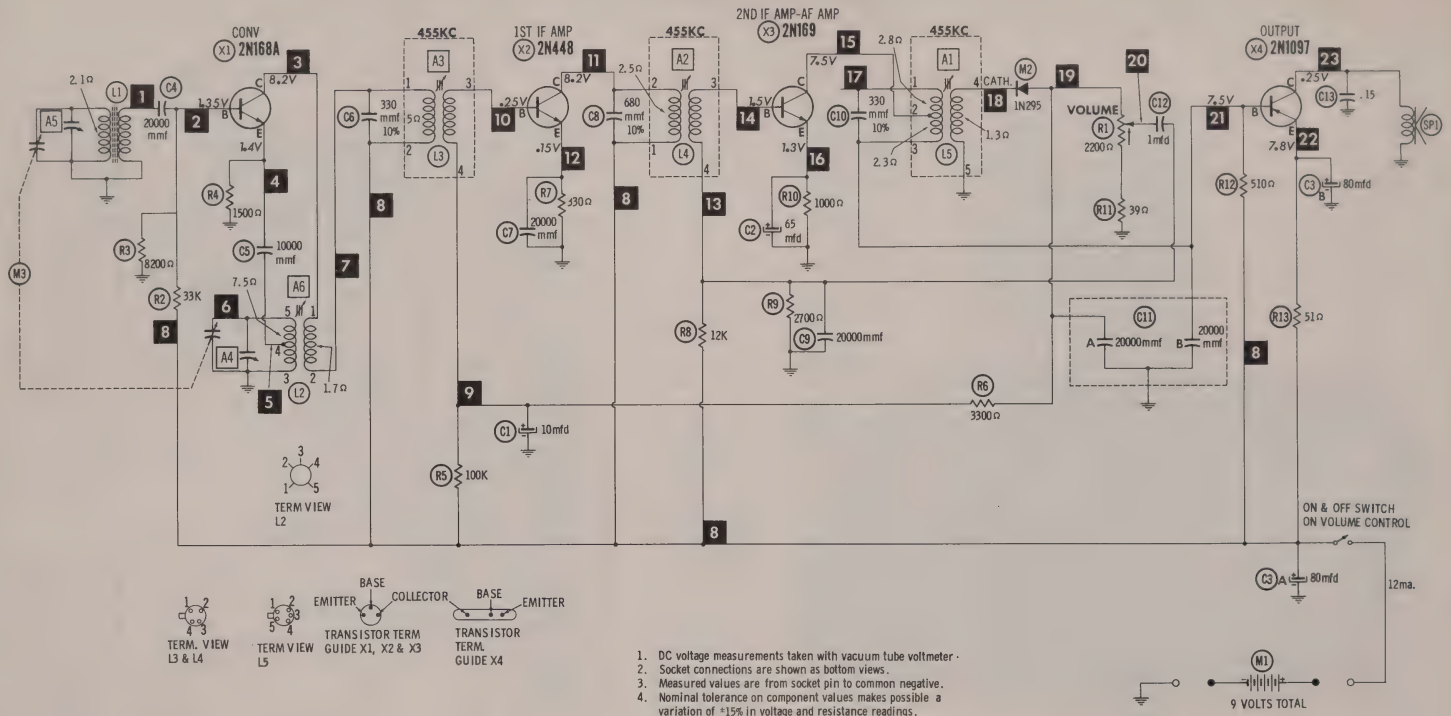
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1960 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JF763

SET 489 FOLDER 19



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

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SILVERTONE MODELS 206, 207 (Ch. 132.45103)

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N168A	Converter	2N446		2N1366	2N168A	NPN
X2	2N448	IF Amp			2N1367		NPN
X3	2N169	IF Amp - AF Amp	2N445		2N1367	2N169	NPN
X4	2N1097	Output		2N408	2N631		PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	10	44396-4	PWE10010	EC10-10	TT12X10	ML10-15	TE-1114	
C2	65	10	44396-3	PWE10050	EC50-10	PETA1675	ML50-15	TE-1134	
C3A	80	10	44397-2	BCD10X8080	ECPAN7			VL-2350	
B	80	10							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C5	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C6	330 10%		1469-00033		22R5T33	CM-19B-331K	MCB241	MS-333
C7	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C8	680 10%		1469-00068		1R5T68	CM-19B-681K	MCJ249	MS-368
C9	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C10	330 10%		1469-00033		22R5T33	CM-19B-331K	MCB241	MS-333
C11A	20000		BPD-2X02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
B	20000			DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C12	L.0 3V	#44684-9		UK-105				
C13	.15 100V		P288N-15		CUB2P15	1DP-3-154	GEM-2015	2TM-P15

#Silvertone Part Number

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	2200Ω	1/4	45000-6					Volume and Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	33K	
R3	8200Ω	
R4	1500Ω	
R5	100K	

ITEM No.	RATING	REMARKS
R6	3300Ω	
R7	330Ω	
R8	12K	
R9	2700Ω	

ITEM No.	RATING	REMARKS
R10	1000Ω	
R11	39Ω	
R12	510Ω	
R13	51Ω	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		SILVERTONE PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	44511-3	14-9005	14-9005				
L2	Osc Coil	45783-1						
L3	1st IF Trans	44855-9						
L4	2nd IF Trans	44855-10						
L5	3rd IF Trans	44855-11						

PRINTED BOARD

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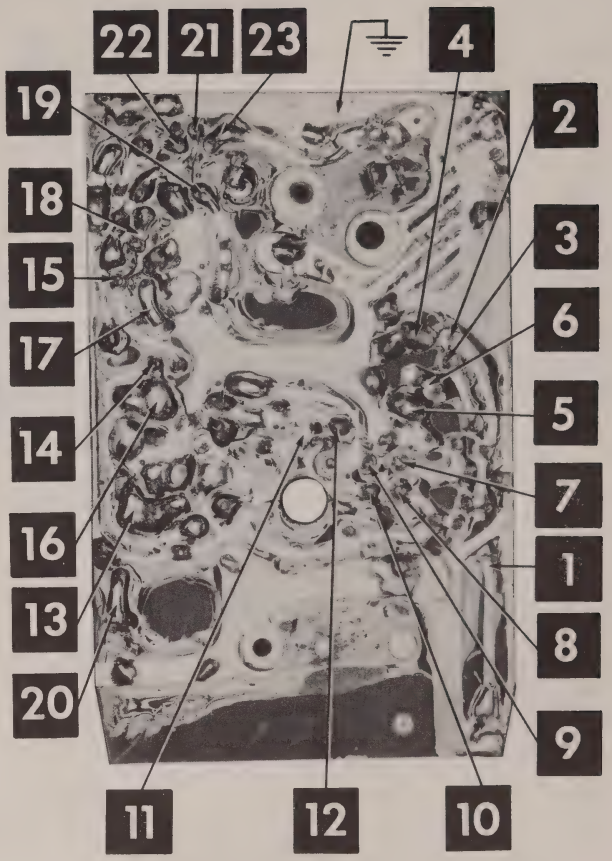


PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SILVERTONE PART No.	QUAM PART No.	
SP1	2 3/4"	PM	30-34Ω	47467-1	27A06Z30	

BATTERIES

ITEM No.	VOLTAGE	SILVERTONE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V	6418		2U6		216		M-1604	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		SILVERTONE PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295		1N636	1N295	1N295	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Tuning Cap	47721	2 Gang

CABINETS & CABINET PARTS

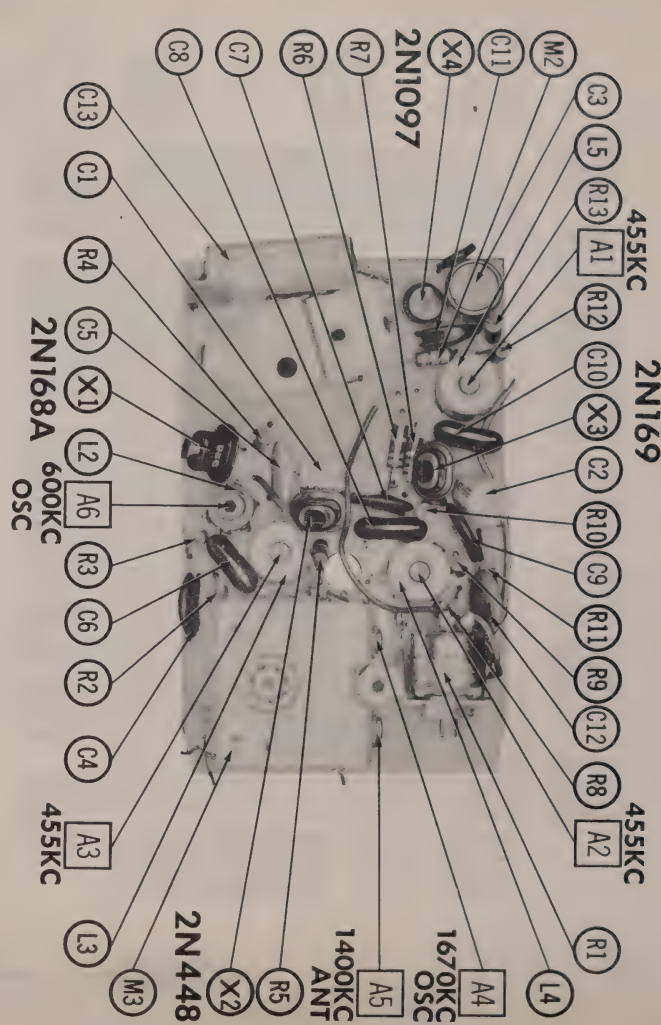
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	45519-83	Tuning, Model 207
Knob	45519-59	Tuning, Model 206
Knob	46422-83	Off-On Volume, Model 207
Knob	46422-59	Off-On Volume, Model 206
Cabinet	47040-59	Model 206
Cabinet	47040-83	Model 207

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



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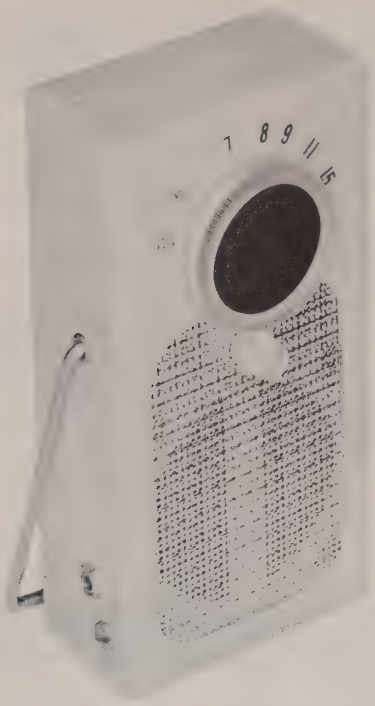
**SUPEREX
MODEL TR-66**

SUPEREX
MODEL TR-66



SUPEREX
MODEL TR-66

TRADE NAME	Superex Model TR-66
MANUFACTURER	Superex Electronics Corp., 4-6 Radford Place, Yonkers, N.Y.
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC
TUNING RANGE-BROADCAST 520-1610 KC	RATING 7 MA @ 9 Volts DC (No Signal, Min. Volume) 12 MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A5 — GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

A4, A6 — GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	Loop	455 KC (400~ mod)	Tuning gang fully open	Across voice coil	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2	"	1600 KC	1600 KC	"	A4	"
3	"	600 KC	600KC	"	A5	
4.	"	1400KC	Tune to 1400KC Signal.	"	A6	Adjust for maximum output while rocking tuning gang.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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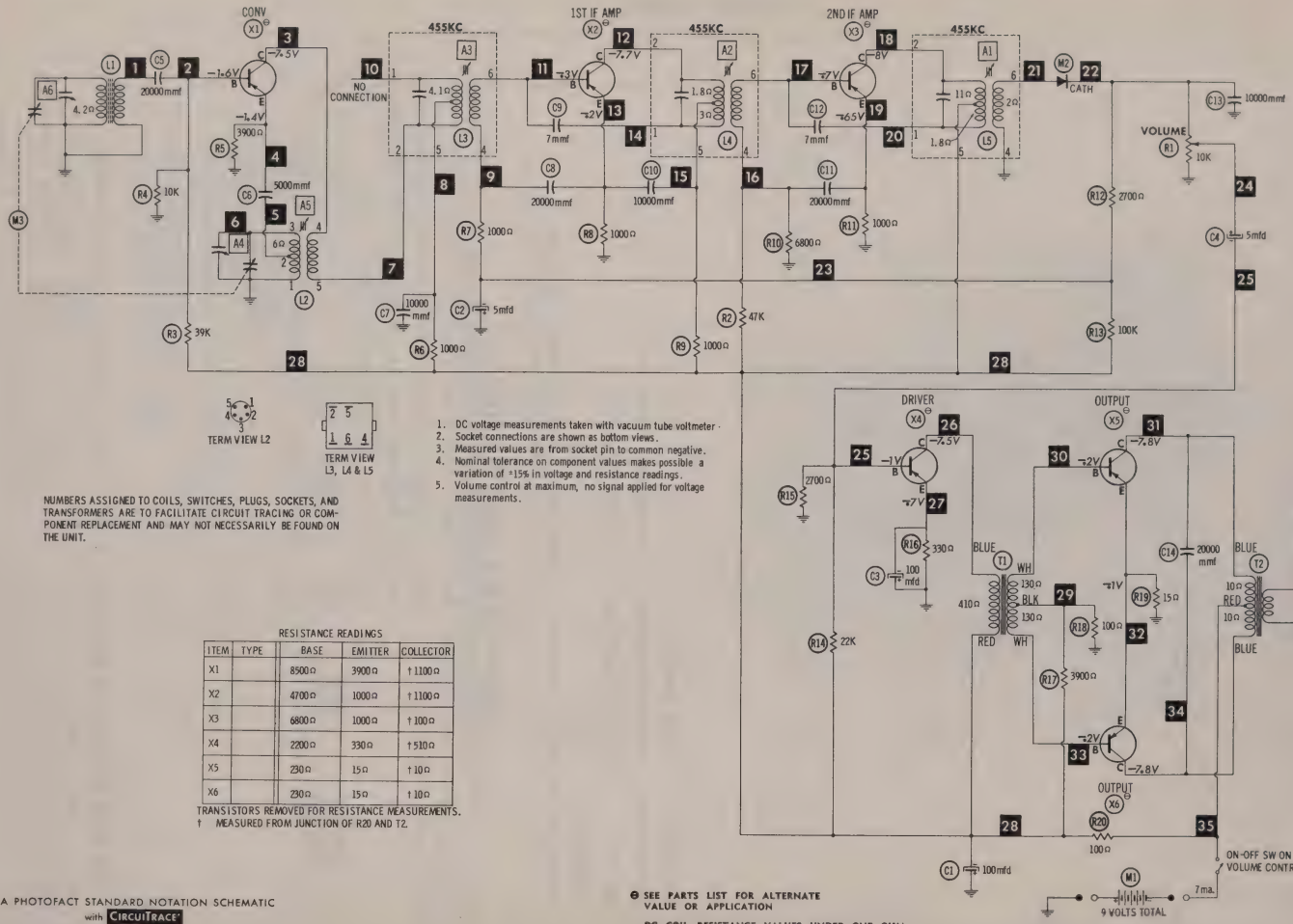
JF824

SET 489 FOLDER 20



TERM VIEW L2

TERM VIEW L3, L4 & L5

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TYPE	BASE	EMITTER	COLLECTOR
X1		8500Ω	3900Ω	†1100Ω
X2		4700Ω	1000Ω	†1100Ω
X3		6800Ω	1000Ω	†100Ω
X4		2200Ω	330Ω	†510Ω
X5		230Ω	15Ω	†10Ω
X6		230Ω	15Ω	†10Ω

TRANSISTORS REMOVED FOR RESISTANCE MEASUREMENTS.
† MEASURED FROM JUNCTION OF R20 AND T2.

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Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

SUPEREX MODEL TR-66

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	①	Converter		2N411	GT761	2N411	PNP
X2	②	1st IF Amplifier		2N409	2N483	2N373	PNP
X3	③	2nd IF Amplifier		2N409	2N482	2N409	PNP
X4	④	Driver		2N109	2N362	2N109	PNP
X5	⑤	Output		2N408	2N632	2N109	PNP
X6	⑤	Output		2N408	2N362	2N109	PNP

① Type GT761, 2N411, 2N140 may be used in this application.
② Type GT760, 2N483 may be used in this application.
③ Type 2N482, 2N409, 2N139 may be used in this application.
④ Type 2N104, 2N109 may be used in this application.
⑤ Type 2N109, 2N359 may be used in this application.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	SUPEREX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	100	12		PWE25100	NLW100-12	TT15X100	ML100-15	TE-1135	
C2	5	12		PWE25005	EC5-15	TT12X5	ML5-15	TE-1127	
C3	100	12		PWE25100	NLW100-12	TT15X100	ML100-15	TE-1135	
C4	5	12		PWE25005	EC5-15	TT12X5	ML5-15	TE-1127	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C6	5000		BPD-005	DD-502	BYA10D5	CCD-502	GP250	5HK-D50
C7	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C8	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C9	7		NPO-SI 6.8	TCZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C11	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20
C12	7		NPO-SI 6.8	TCZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	GP110	5HK-S10
C14	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-S20

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SUPEREX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A B	10K Switch	1/4			44S-10K-W Not Req.			Volume Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	47K	
R3	39K	
R4	10K	
R5	3900Ω	
R6	1000Ω	
R7	1000Ω	
R8	1000Ω	

ITEM No.	RATING	REMARKS
R9	1000Ω	
R10	6800Ω	
R11	1000Ω	
R12	2700Ω	
R13	100K	
R14	22K	
R15	2700Ω	

ITEM No.	RATING	REMARKS
R16	330Ω	
R17	3900Ω	
R18	100Ω	
R19	15Ω	
R20	100Ω	

PRINTED BOARD

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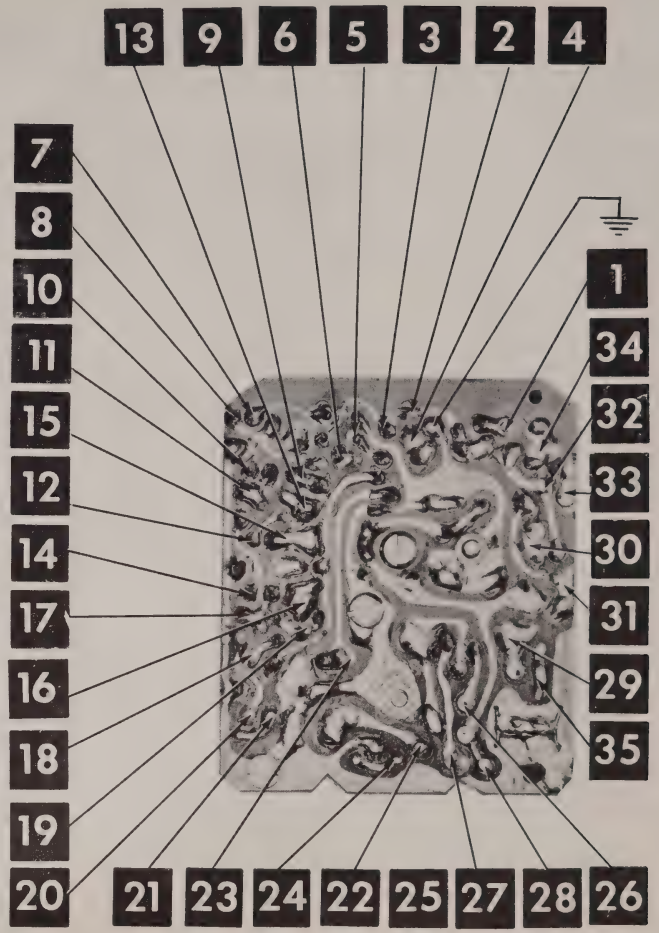


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		SUPEREX PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1 L2 L3 L4 L5	Loopstick Osc. Coil 1st IF Trans. 2nd IF Trans. 3rd IF Trans.		14-9005	14-9005		2005		

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	SUPEREX PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1, 2	1							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	SUPEREX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	250Ω	3-4Ω					TA-42①			① Use 8Ω secondary

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SUPEREX PART No.	QUAM PART No.	
SP1	2½"	PM	3-4Ω		25A07	

BATTERIES

ITEM No.	VOLTAGE	SUPEREX PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			P6M		226		M-1600	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		SUPEREX PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2			1N60	1N60	1N60	Detector (Pigtail)

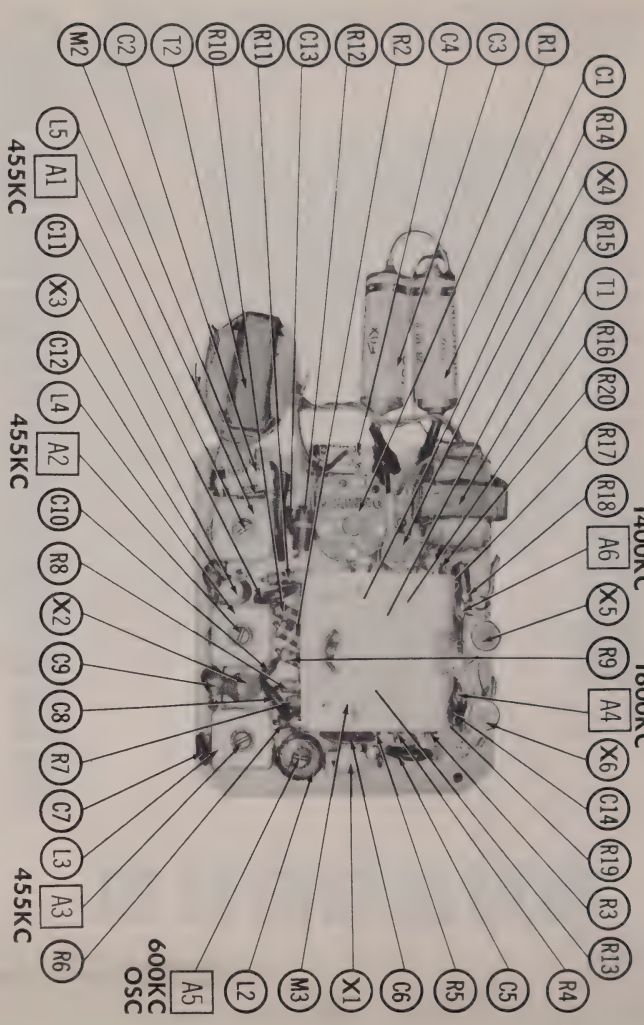
MISCELLANEOUS

ITEM No.	PART NAME	SUPEREX PART No.	NOTES
M3	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



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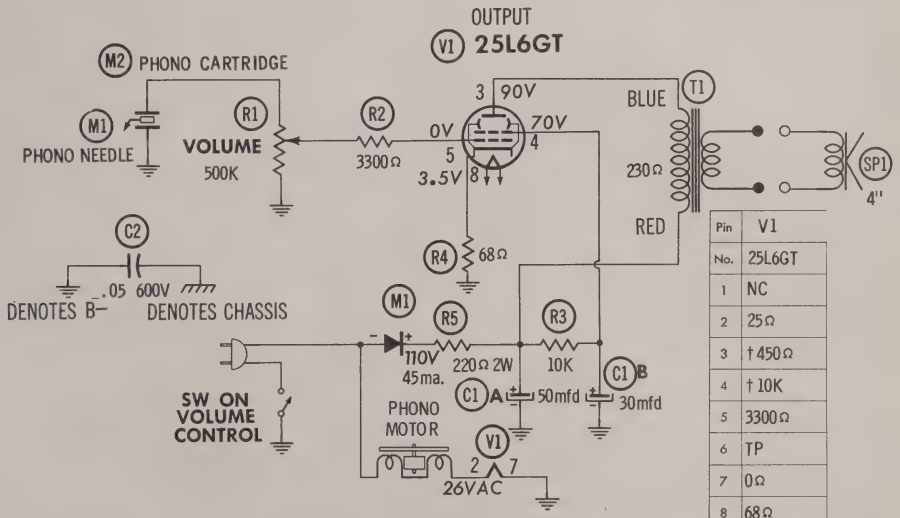
WESTINGHOUSE
MODEL 50MP1

WESTINGHOUSE
MODEL 50MP1

TRADE NAME	Westinghouse Model 50MP1
MANUFACTURER	Westinghouse Electric Corp., Metuchen, N. J.
TYPE SET	AC Operated One Tube Phono Amplifier With Manual 3 Speed Record Player
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 40 Watts, .45 Amp. @117 Volts



Pin No.	V1 25L6GT
1	NC
2	25Ω
3	† 450Ω
4	† 10K
5	3300Ω
6	TP
7	0Ω
8	68Ω

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† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION
TP TIE POINT

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 489 FOLDER 21

PARTS LIST AND DESCRIPTIONS

TUBES

• CBS •	GENERAL ELECTRIC •	RAYTHEON •	SYLVANIA •

ITEM No.	USE	TYPE
V1	Output	25L6GT

ITEM No.	USE	TYPE

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Westinghouse PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	690V021H19	PRS2200	BBRD5315	WD210	TDLD-8	TVA-2450	
B	30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S5

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Westinghouse PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	670V021H20	B-60-S	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	3300Ω	
R3	10K	

ITEM No.	RATING	REMARKS
R4	68Ω	

ITEM No.	RATING	REMARKS
R5	220Ω 2W	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA Westinghouse PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2500Ω	3-4Ω	690V020H58	24S53	A-3025	AU-604	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA Westinghouse PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	690V021H18	4A1R	

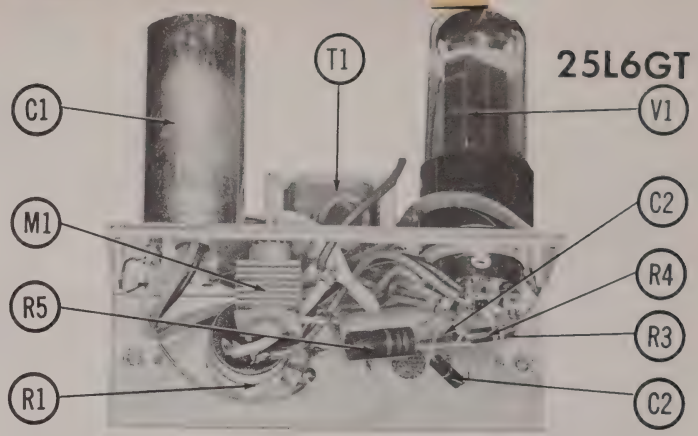
RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Westinghouse PART No.	INTERNATIONAL PART No.	ITT PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.045A	690V020H56①	RS065①	1234AH①	65①	SR200②	① Selenium Type ② Silicon Type

MISCELLANEOUS

ITEM No.	PART NAME	Westinghouse PART No.	NOTES
	Idler Wheel	690V020H72	(Phono) Walsco Part #1433

CHASSIS—BOTTOM VIEW



PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA Westinghouse PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE
M2	690V021H07	124-TS	N8-1 & N8-3	46					
	690V020H98 *	KR74-T*							

* Tone Arm

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA Westinghouse PART No.	CLEVITE WALCO PART No.	JENSEN PART No.	REMARKS
M3	690V021H09 (78 RPM)		CRA-57 † or CRA-57D ♦	† Sapphire ♦ Diamond
	690V021H08 (LP)		CRA-57LP † or CRA-57LPD ♦	

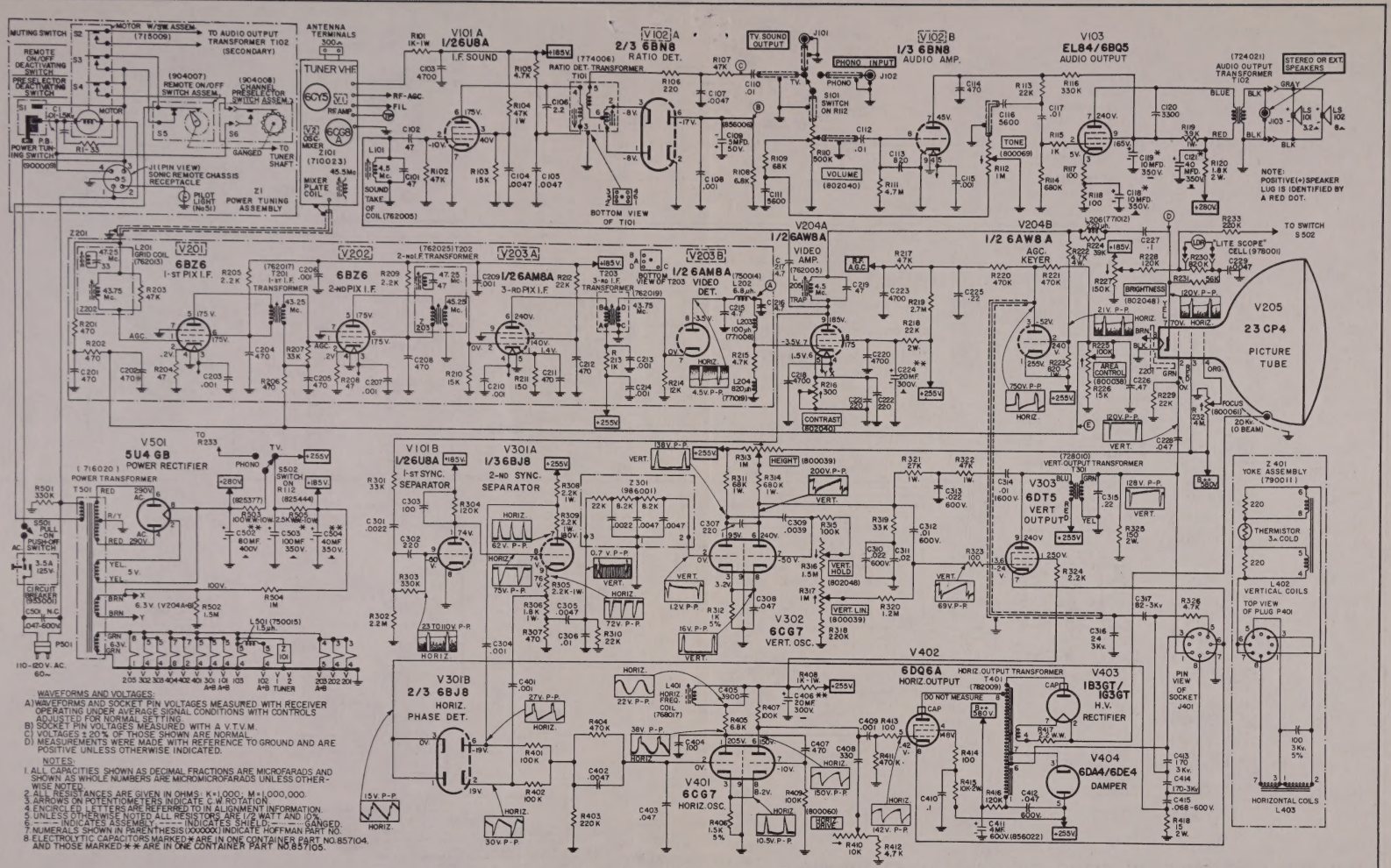
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	690V021H17	Volume
Knob	690V021H01	Cartridge Turnover
Knob	690V020H84	Speed Control
Cabinet	690V021H23	Includes Baffle & Hardware

WIRING DATA

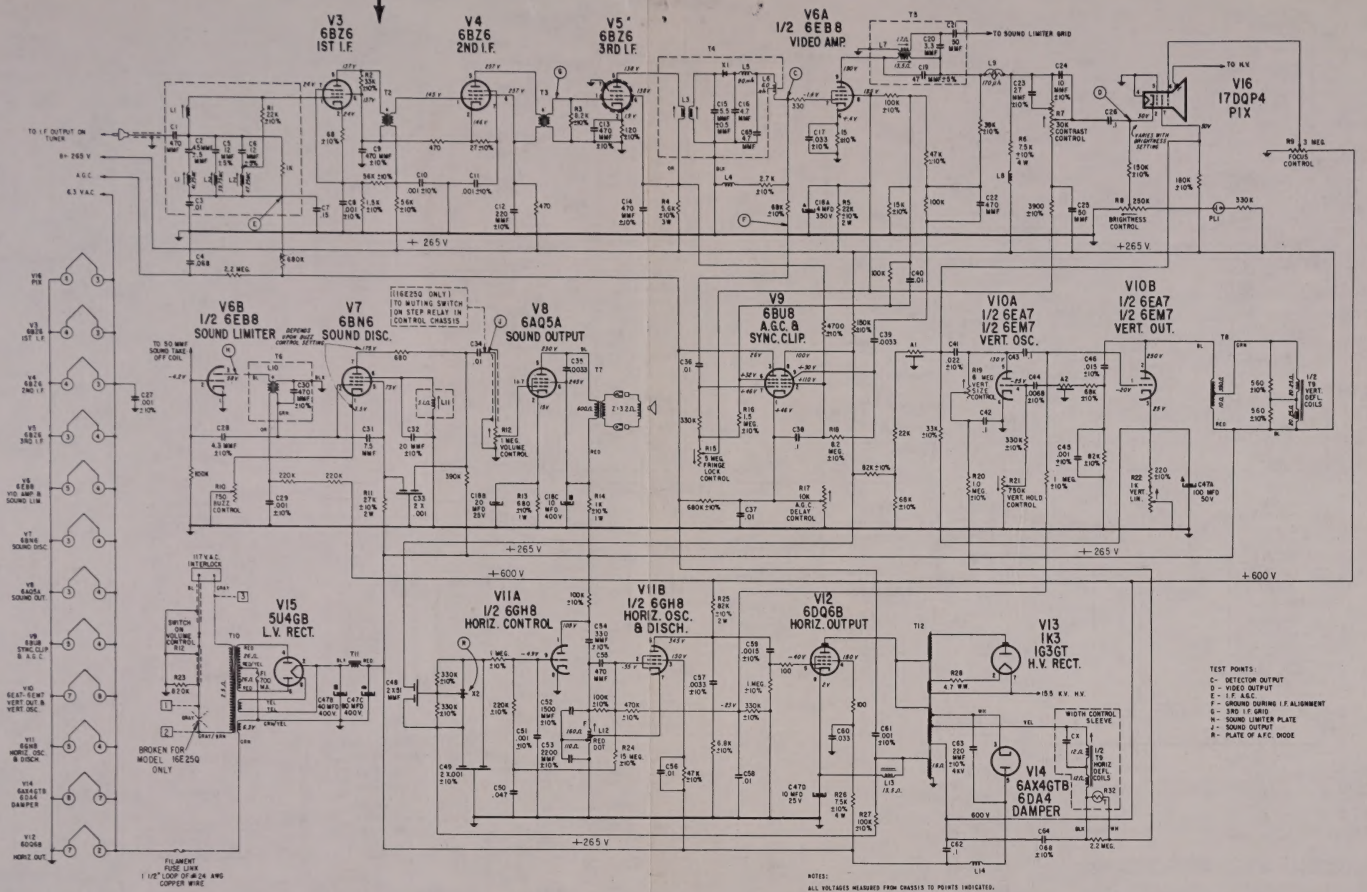
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)


V101A 1/2 6U8A I.F. SOUND
V102A 2/3 6BN8 RATIO DET.
V102B 1/3 6BN8 AUDIO AMP.
V103 EL84/6BQ5 AUDIO OUTPUT
V201 6BZ6 1ST PIX I.F.
V202 6BZ6 2ND PIX I.F.
V203A 1/2 6AM8A 3RD PIX I.F.
V203B 1/2 6AM8A VIDEO DET.
V204A 1/2 6AW8A VIDEO AMP.
V204B 1/2 6AW8A AGC. KEYER
V205 23 CP4 PICTURE TUBE
V501 5U4 GB POWER RECTIFIER
V101B 1/2 6U8A 1ST SYNC. SEPARATOR
V301A 1/3 6BJ8 2ND SYNC. SEPARATOR
V301B 2/3 6BJ8 HORIZ. PHASE DET.
V302 6CG7 VERT. OSC.
V303 6DT5 VERT OUTPUT
V401 6CG7 HORIZ. OSC.
V402 6DQ6A HORIZ. OUTPUT
V403 1B3GT/1G3GT H.V. RECTIFIER
V404 6DA4/6DE4 DAMPER
TUNER VHF
ANTENNA TERMINALS
MUTING SWITCH
REMOTE ON/OFF DEACTIVATING SWITCH
PRESELECTOR DEACTIVATING SWITCH
POWER TUNING SWITCH
MOTOR W/GEAR ASSEM. (715009)
TO AUDIO OUTPUT TRANSFORMER T102 (SECONDARY)
(904007) REMOTE ON/OFF SWITCH ASSEM.
(904008) CHANNEL/PRESELECTOR SWITCH ASSEM.
GANGED TO TUNER SHAFT
SONIC REMOTE CHASSIS RECEPTACLE
PILOT LIGHT (No.51)
POWER TUNING ASSEMBLY
MIXER PLATE COIL
SOUND TAKE-OFF COIL (762005)
BOTTOM VIEW OF T101
RATIO DET. TRANSFORMER T101 (774006)
TV. SOUND OUTPUT
PHONO INPUT
PHONO
S101 SWITCH ON R112
VOLUME (802040)
TONE (800069)
STEREO OR EXT. SPEAKERS
AUDIO OUTPUT TRANSFORMER T102 (724021)
NOTE: POSITIVE(+) SPEAKER LUG IS IDENTIFIED BY A RED DOT.
GRID COIL (762013)
1ST PIX I.F. TRANSFORMER T201 (762017)
2ND I.F. TRANSFORMER T202 (762025)
3RD I.F. TRANSFORMER T203 (762019)
BOTTOM VIEW OF T203
VIDEO DET. L202 6.8 μh L203 100 μh (771008) L204 820 μh (771019)
TRAP
AGC
BRIGHTNESS (802048)
"LITE SCOPE" CELL (978001)
AREA CONTROL (800058)
FOCUS (800061)
20 Kv (0 BEAM)
TO SWITCH S502
POWER TRANSFORMER T501 (716020)
TO R233
TV. PHONO
S502 SWITCH ON R112
S501 PULL-ON PUSH-OFF AC. SWITCH
3.5A 125V. CIRCUIT BREAKER (935001)
C501 N.C. .047-600V
P501
110-120 V. AC. 60~
100V.
L501 (750015) 1.5 μh.
WAVEFORMS AND VOLTAGES:
A) WAVEFORMS AND SOCKET PIN VOLTAGES MEASURED WITH RECEIVER OPERATING UNDER AVERAGE SIGNAL CONDITIONS WITH CONTROLS ADJUSTED FOR NORMAL SETTING.
B) SOCKET PIN VOLTAGES MEASURED WITH A V.T.V.M.
C) VOLTAGES ± 20% OF THOSE SHOWN ARE NORMAL.
D) MEASUREMENTS WERE MADE WITH REFERENCE TO GROUND AND ARE POSITIVE UNLESS OTHERWISE INDICATED.
NOTES:
1. ALL CAPACITIES SHOWN AS DECIMAL FRACTIONS ARE MICROFARADS AND SHOWN AS WHOLE NUMBERS ARE MICROMICROFARADS UNLESS OTHERWISE NOTED.
2. ALL RESISTANCES ARE GIVEN IN OHMS: K=1,000, M=1,000,000.
3. ARROWS ON POTENTIOMETERS INDICATE C.W ROTATION.
4. ENCIRCLED LETTERS ARE REFERRED TO IN ALIGNMENT INFORMATION.
5. UNLESS OTHERWISE NOTED ALL RESISTORS ARE 1/2 WATT AND 10%.
6. ---- INDICATES ASSEMBLY, ---- INDICATES GANGED.
7. NUMERALS SHOWN IN PARENTHESIS (XXXXXX) INDICATE HOFFMAN PART NO.
8. ELECTROLYTIC CAPACITORS MARKED * ARE IN ONE CONTAINER PART NO. 857104. AND THOSE MARKED ** ARE IN ONE CONTAINER PART NO. 857105.
Z401 YOKE ASSEMBLY (790011)
THERMISTOR 3x COLD
L402 VERTICAL COILS
TOP VIEW OF PLUG P401
PIN VIEW OF SOCKET J401
HORIZONTAL COILS L403

HOFFMAN MODELS R3653 SERIES, R3663 SERIES, R3673 SERIES, R3683 SERIES (CH. 354)

Schematic Diagram Courtesy of Hoffman Electronics Corporation

ZENITH


V3 6BZ6 IST I.F.
V4 6BZ6 2ND I.F.
V5 6BZ6 3RD I.F.
V6A 1/2 6EB8 VIDEO AMP.
V16 17DQP4 PIX
V6B 1/2 6EB8 SOUND LIMITER
V7 6BN6 SOUND DISC.
V8 6AQ5A SOUND OUTPUT
V9 6BU8 A.G.C. & SYNC. CLIP.
V10A 1/2 6EA7 1/2 6EM7 VERT. OSC.
V10B 1/2 6EA7 1/2 6EM7 VERT. OUT.
V11A 1/2 6GH8 HORIZ. CONTROL
V11B 1/2 6GH8 HORIZ. OSC. & DISCH.
V12 6DQ6B HORIZ. OUTPUT
V13 1K3 1G3GT H.V. RECT.
V14 6AX4GTB 6DA4 DAMPER
V15 5U4GB L.V. RECT.
+265 V
+600 V
TEST POINTS:
C- DETECTOR OUTPUT
D - VIDEO OUTPUT
E - I.F. A.G.C.
F - GROUND DURING I.F. ALIGNMENT
G - 3RD I.F. GRID
N - SOUND LIMITER PLATE
J - SOUND OUTPUT
R - PLATE OF A.F.C. DIODE
NOTES:
ALL VOLTAGES MEASURED FROM CHASSIS TO POINTS INDICATED.
ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
ALL D.C. VOLTAGES TO BE MEASURED WITH A VACUUM TUBE VOLTMETER HAVING 11 MEGOHM INPUT RESISTANCE.
ALL VOLTAGE MEASUREMENTS TO BE MADE WITH NO SIGNAL PRESENT. NORMAL SETTING OF CONTROLS AND CHANNEL SELECTOR SET TO CHANNEL 2 UNLESS OTHERWISE SPECIFIED.
ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
ALL CONDENSER CAPACITY TOLERANCE 20% UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS ARE 20% TOLERANCE, CARBON, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
RESISTANCE MEASUREMENTS SHOWN WITH COILS DISCONNECTED FROM CIRCUIT.
COIL RESISTANCES NOT GIVEN ARE UNDER ONE OHM.
CATHODE RAY TUBE 2ND ANODE VOLTAGE TO BE MEASURED WITH ELECTROSTATIC OR 20K MIN. OHM PER VOLT HIGH VOLTAGE METER.
ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.
ALIGNMENT POINTS
CIRCLED LETTERS INDICATE ALIGNMENT AND TEST POINTS
CHASSIS
SOCKET AND WIRING FOR 16E25Q MODEL
SOCKET (FRONT VIEW)
PLUG (REAR VIEW)
PLUG USED WITH S-40583 REMOTE CONTROL CHASSIS
SWITCH ON STEP RELAY
REMOTE CONTROL TRANS. PRI.
BROKEN FOR MODEL 16E25Q ONLY
FILAMENT FUSE LINK 1 1/2" LOOP OF #24 AWG COPPER WIRE
117 V A.C. INTERLOCK
SWITCH ON VOLUME CONTROL
TO I.F. OUTPUT ON TUNER
TO SOUND LIMITER GRID
TO H.V.
3 MEG. FOCUS CONTROL
BRIGHTNESS CONTROL
CONTRAST CONTROL
VERT. HOLD CONTROL
VERT. LIN.
VERT. SIZE CONTROL
H.V. DELAY CONTROL
FRINGE LOCK CONTROL
VOLUME CONTROL
TONE CONTROL
BUZZ CONTROL
WIDTH CONTROL SLEEVE
TO 50 MMF SOUND TAKE-OFF COIL
(16E25Q ONLY) TO MUTING SWITCH ON STEP RELAY IN CONTROL CHASSIS
DEPENDS UPON BUZZ CONTROL SETTING
VARIES WITH BRIGHTNESS SETTING
4.7 V A.C.
6.3 V A.C.
B+ 265 V
A.G.C.

ZENITH MODELS E1810B, BU, E1811C, CU, E1812L, LU, E1814P, PU, E2010C, E2015L (CH. 16E25, Q, U)

Schematic Diagram Courtesy of Zenith Radio Corporation

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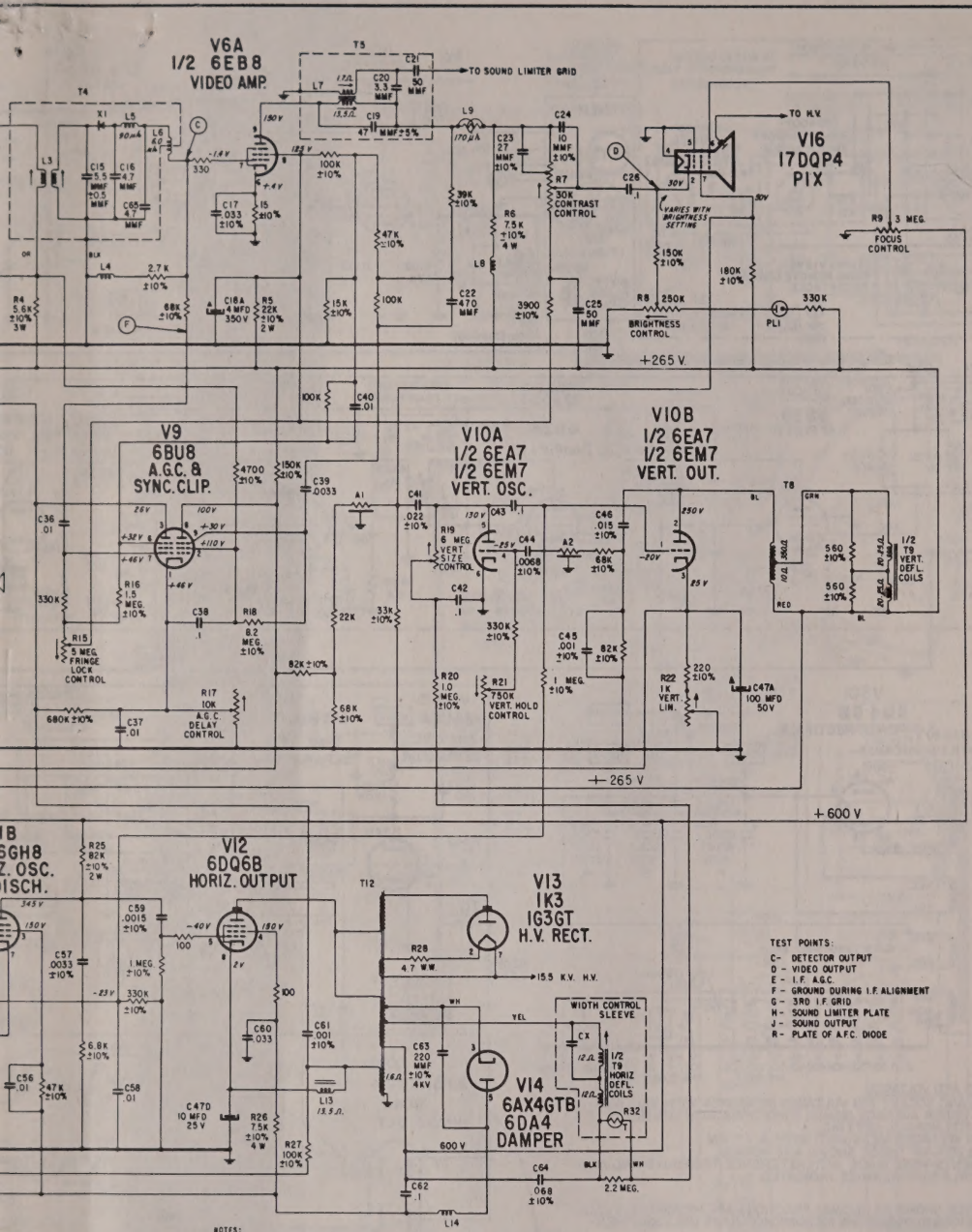

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